TC-WR690/WR790

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
TC-WR690/WR790

E Model
TC-WR690

Photo : TC-WR790

SPECIFICATIONS

Recording system 4-track 2-channel stereo
Fast winding time Approx. 90 sec. (with Sony C-60 cassette)
Bias AC bias
Signal-to-noise ratio (at peak level)

Cassette (Dolby NR OFF)	Type IV (Sony Metal-Select/S)	Type II (Sony UX-S)	Type I (Sony HF-S)
	58 dB	57 dB	55 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

Harmonic distortion
0.4% (with Sony Type I, 160 nWb/m, 315 Hz, 3rd H.D.)
1.8% (with Sony Type IV, 250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (DOLBY NR OFF)

Cassette / Model	Type IV cassette (Sony Metal-Select/S)	Type II cassette (Sony UX-S)	Type I cassette (Sony HF-S)
TC-WR 690	30 - 18,000 Hz (±3 dB, IEC) 30 - 13,000 Hz [±3 dB (-4 dB) recording]	30 - 16,000 Hz (±3 dB, IEC)	30 - 15,000 Hz (±3 dB, IEC)
TC-WR 790	30 - 19,000 Hz (±3 dB,IEC) 30 - 13,000 Hz [±3 dB (-4dB) recording]	30 - 18,000 Hz (±3 dB, IEC)	30 - 16,000 Hz (±3 dB, IEC)

使用時は添付資料も参照のこと
Refer to the additional documents.

Model Name Using Similar Mechanism	TC-WR521/WR590	
Tape Transport Mechanism Type	DECK A	TCM-190RB12CJ
	DECK B	TCM-190RB12CJ

Wow and flutter ±0.13% W.Peak (IEC)
0.07% W.RMS (NAB)
±0.18% W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 kilohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 kilohms
	Load impedance	Over 10 kilohms
Headphones (stereo phone jack)	Output level	1 mW at a load impedance of 32 ohms

General

Power requirements
US, Canadian model:
120V AC, 60Hz
UK model:
240V AC (or 220V AC adjustable by Sony personnel), 50/60Hz
AEP, Germany model:
220—230V AC, (or 240V AC adjustable by Sony personnel), 50/60Hz
E model:
120, 220, or 240V AC adjustable, 50/60Hz

—Continued on next page—

STEREO CASSETTE DECK

SONY®

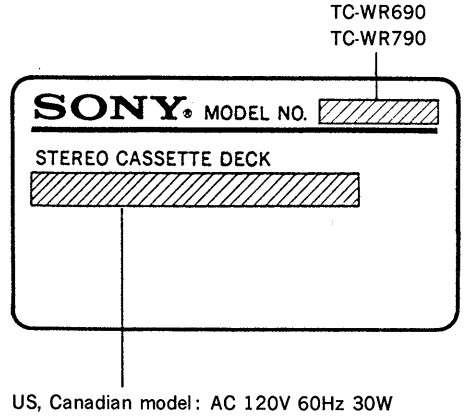
Power consumption	30 W
Dimensions	Approx. 430 × 123 × 285 mm (w/h/d) (17 × 4⅞ × 11¼ inches) including projecting parts and controls
Weight	Approx. 4.5 kg (9 lbs 15 oz) (TC-WR690) Approx. 4.6 kg (10 lbs 3 oz) (TC-WR790)

Supplied accessories
Audio connecting cords (2)

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

—MODEL IDENTIFICATION—
(Specification Label)



US, Canadian model: AC 120V 60Hz 30W
AEP, Germany model: AC 220—230V~50/60Hz
UK model: AC 240V~50/60Hz
E model: AC 120, 220, 240V~50/60Hz 30W

Features

For higher quality recording/playback
- **The Dolby HX PRO* system** which improves the linearity of the tape's high-range response during recording.
- **B and C type Dolby NR* systems** which reduce tape noise.
- **Independent B and C type Dolby NR* systems on each deck** which allow the free selection of Dolby systems on each deck during Simultaneous Recording, Relay Recording, or normal-speed dubbing (TC-WR790 only).

For your convenience
- **Automatic tape type detection** during playback and recording.
- **The Multi-AMS and Memory Play functions** which provide easy access to a desired selection.
- **A relay function** for long recording and playback.
- **Synchronized dubbing** at normal or high speed.
- **Simultaneous Recording function** for the simultaneous recording of the same source to cassettes in both decks.
- **A dubbing level control** which allows the dubbing volume level to be varied during normal-speed dubbing (TC-WR790 only).

For easier operation
- **Twin easy-to read digital counters** which show the elapsed recording or playing time on each deck.

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Differences between the models

This instruction manual covers the TC-WR690 and TC-WR790. The TC-WR790 has the following features which are not in the TC-WR690.
- Independent B and C type Dolby NR* systems on each deck
- A dubbing level control

Note: All illustrations in this manual show the TC-WR790.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

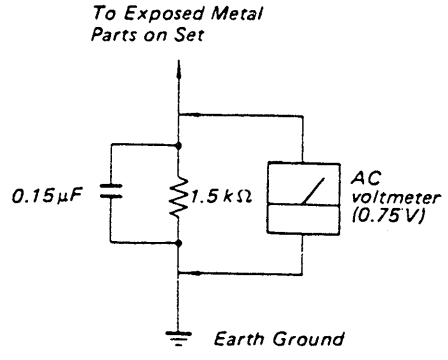


Fig. A. Using an AC voltmeter to check AC leakage.

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

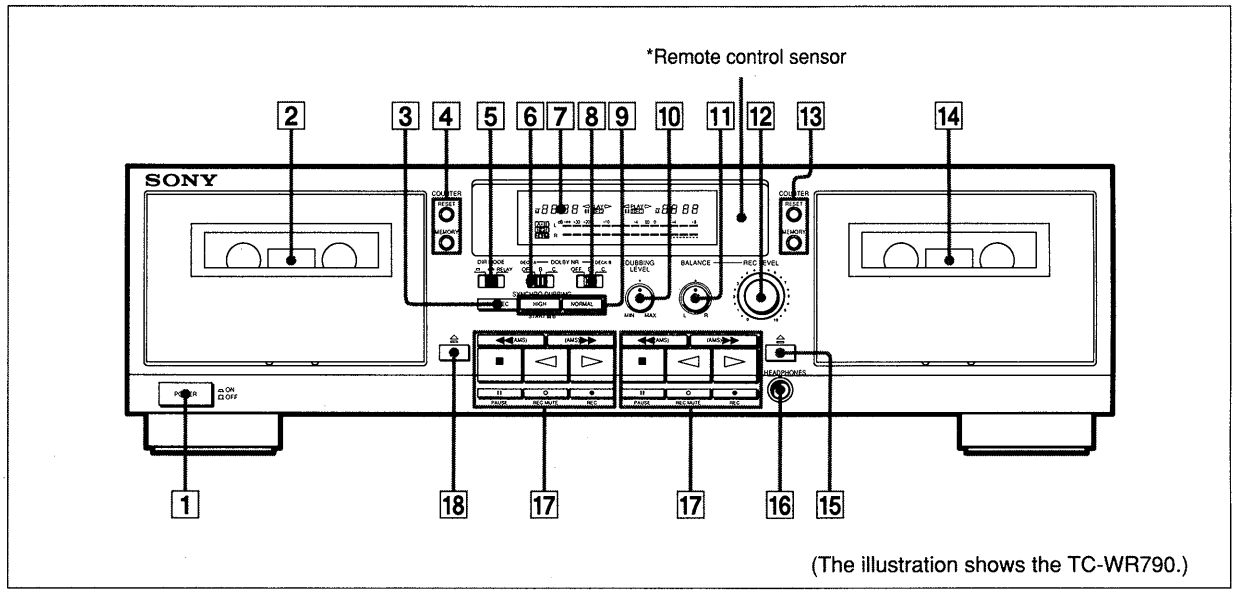
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS

Front Panel



(The illustration shows the TC-WR790.)

For details, refer to the page number indicated in parenthesis.

1 **POWER switch**
2 **Deck A**
3 **A+B REC (simultaneous recording) button (page 15)**
4 **COUNTER buttons (deck A) (page 11)**
RESET button
MEMORY button
5 **DIR (direction) MODE switch (pages 7, 8, 12, 15, 16 and 18)**
6 **DOLBY NR (Dolby noise reduction) switch (TC-WR790: for deck A only; TC-WR690: for decks A and B) (pages 7, 8, 12, 15, 16 and 18)**
7 **Display panel**
8 **DOLBY NR (Dolby noise reduction) switch (deck B) (TC-WR790 only) (pages 7, 8, 12, 15, 16 and 18)**
9 **SYNCHRO DUBBING buttons (page 18)**
HIGH speed button
NORMAL speed button
10 **DUBBING LEVEL control (TC-WR790 only) (page 18)**
11 **BALANCE control (page 12)**
12 **REC (recording) LEVEL control (pages 12 and 13)**
13 **COUNTER buttons (deck B) (page 11)**
RESET button
MEMORY button
14 **Deck B**
15 **⏏ (eject) button (deck B)**
16 **HEADPHONES jack (stereo phone jack)**
17 **Tape operation buttons**
◀◀ (leftward fast winding) (Multi-AMS) button**
▶▶ (rightward fast winding) (Multi-AMS) button**
■ (stop) button
◀ (reverse play) button
▶ (forward play) button
II PAUSE button
O REC MUTE (record muting) button (page 17)
● REC (recording) button
18 **⏏ (eject) button (deck A)**

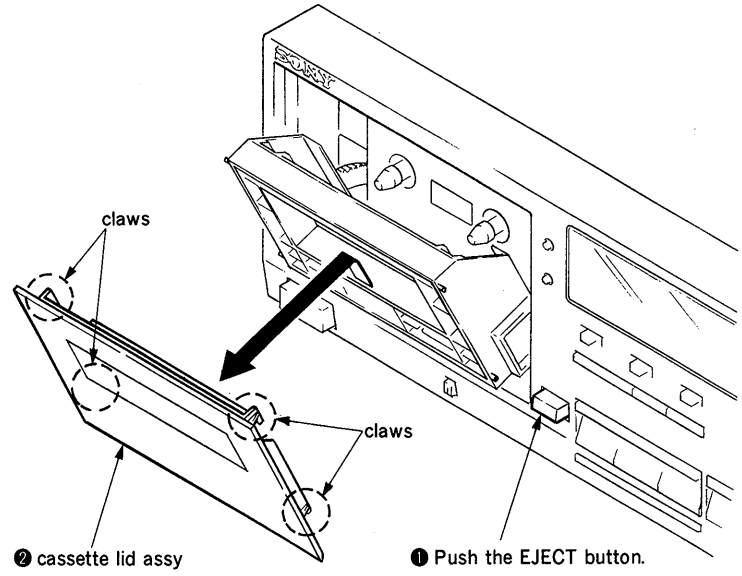
***Remote control sensor**
You can remotely control this cassette deck with:
— A remote commander that came with a Sony amplifier or receiver if it has the R mark and cassette deck control capability.
— Any optional Sony remote commander with the R mark and cassette deck control capability.

**AMS is an abbreviation for Automatic Music Sensor.

SECTION 2
DISASSEMBLY

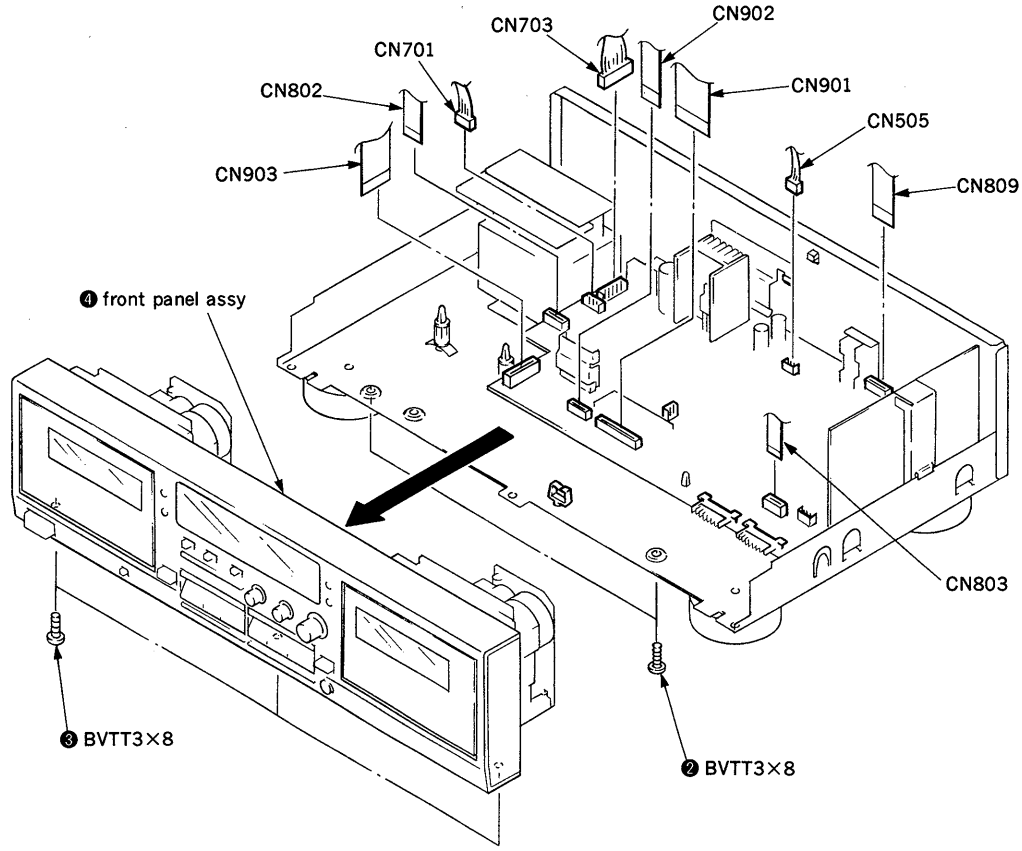
Note : Follow the disassembly procedure in the numerical order given.

2-1. CASSETTE LID ASSY

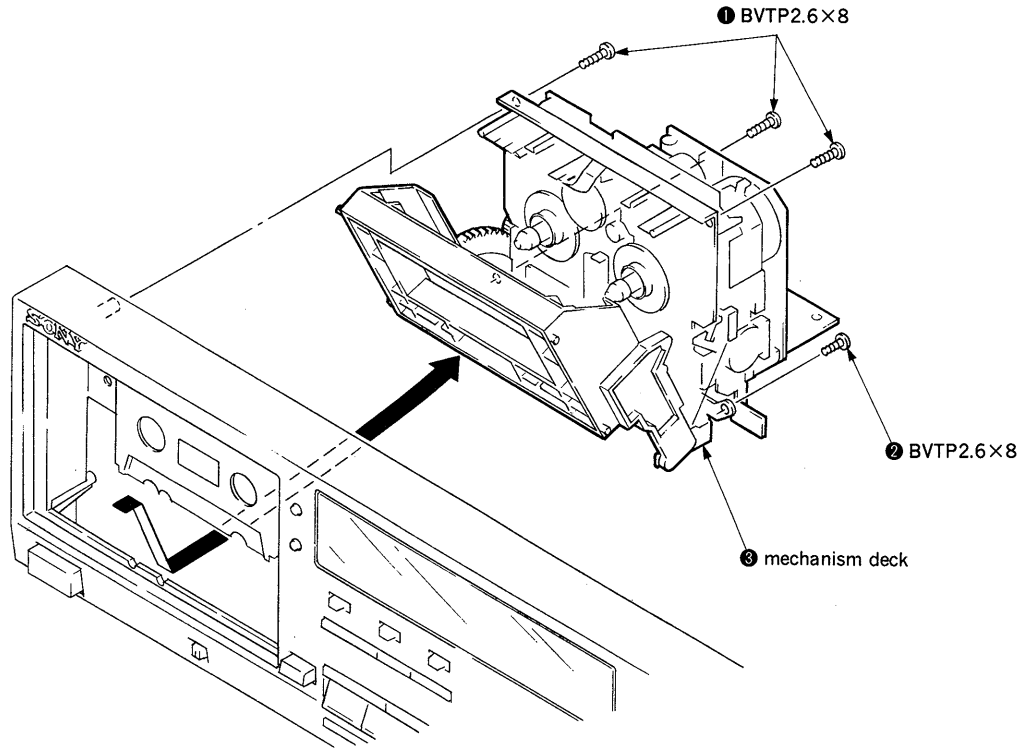


2-2. FRONT PANEL ASSY

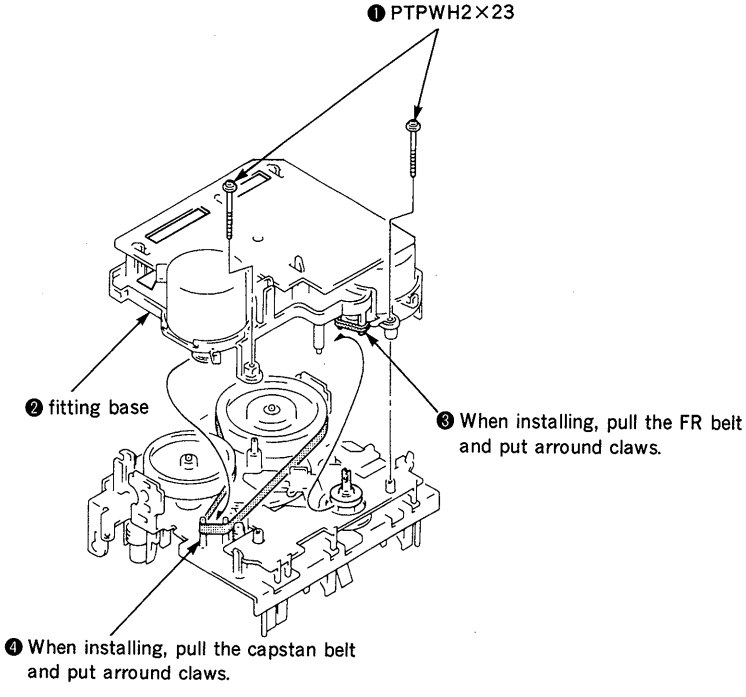
❶ Remove the connectors.



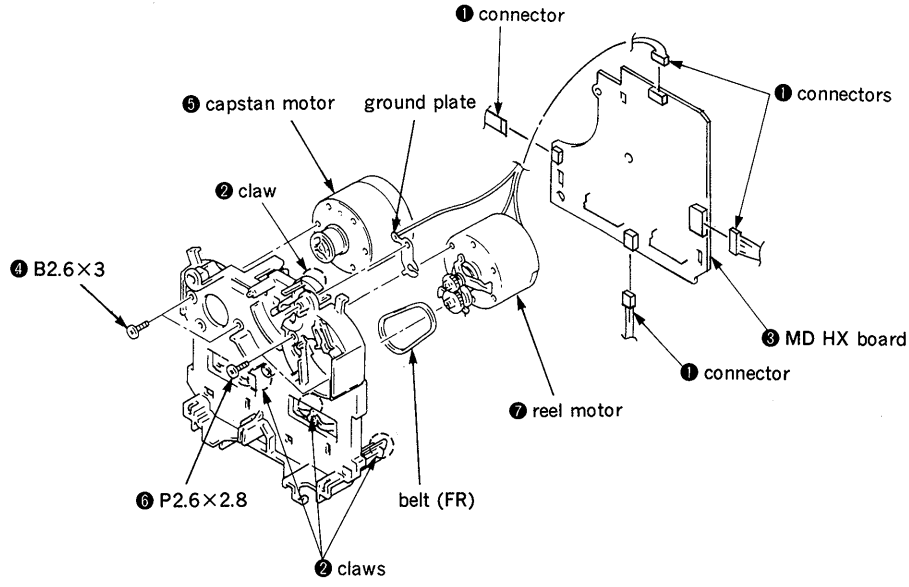
2-3. MECHANISM DECK



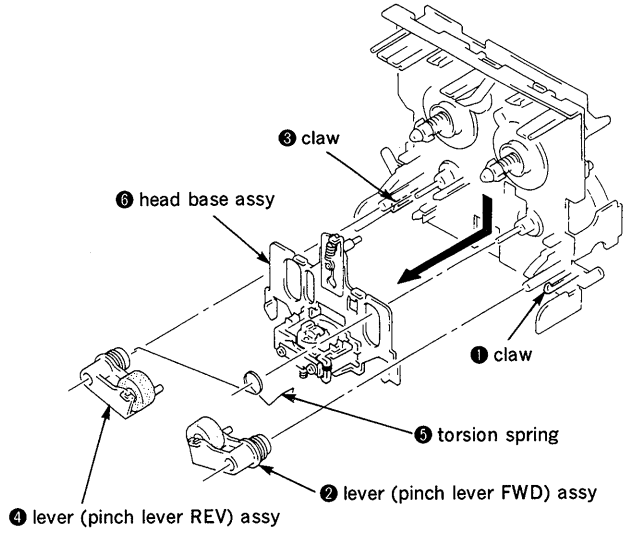
2-4. CAPSTAN MOTOR, REEL MOTOR (1)


❶ PTPWH2×23
❷ fitting base
❸ When installing, pull the FR belt and put arround claws.
❹ When installing, pull the capstan belt and put arround claws.

2-5. CAPSTAN MOTOR, REEL MOTOR (2)



2-6. HEAD, PINCH ROLLER



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback/erase head pinch roller
   rubber belts idlers
   capstan
2. Demagnetize the record/playback head with a head demagnetizer.
   (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be perfomed with the rated power supply voltage unless otherwise noted.

Torque Measurement

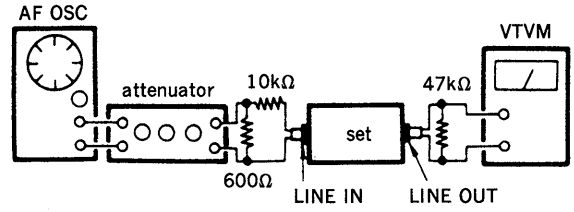
Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 65g•cm (0.42 to 0.90 oz•inch)
Forward back tension	CQ-102C	1 to 6g•cm (0.014 to 0.08 oz•inch)
Reverse	CQ-102RC	30 to 65g•cm (0.42 to 0.90 oz•inch)
Reverse back tension	CQ-102RC	1 to 6g•cm (0.014 to 0.08 oz•inch)
Forward, Reverse	CQ-201B	70 to 120g•cm (0.98 to 1.67 oz•inch)

SECTION 4
ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch : OFF
     DIR MODE switch : ⇄
   - Standard record position
     Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

—Record Mode—



Standard Input Level

Input terminal	LINE IN
source impedance	10kΩ
input signal level	0.25V (−10dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47kΩ
output signal level	0.44V (−5dB)

Test Tape

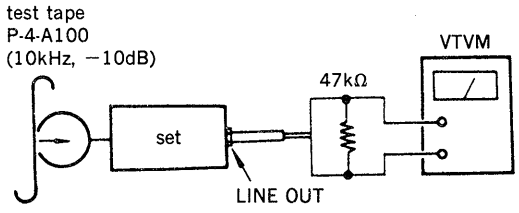
Tape	Contents	Use
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

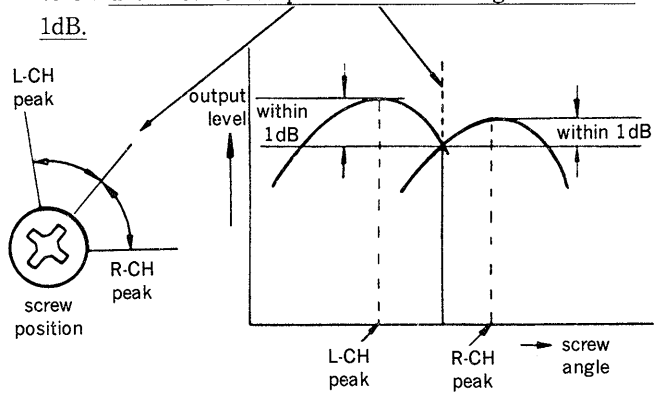
DECK A DECK B

Procedure :

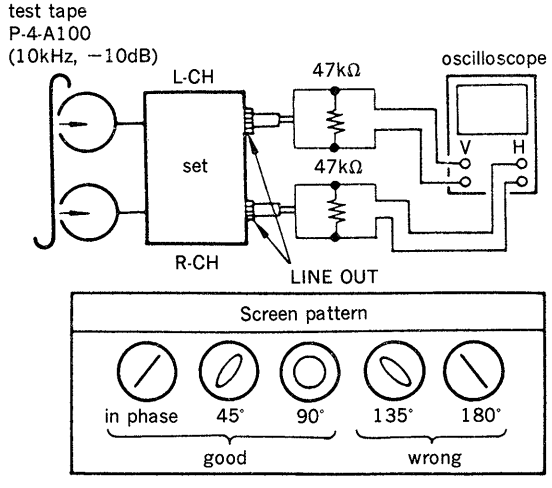
1. Reverse Playback Mode



2. Turn the adjustment screw for the maximum output levels. If these levels do notmatch, turn the adjustment screw until both of output levels match together within 1dB.

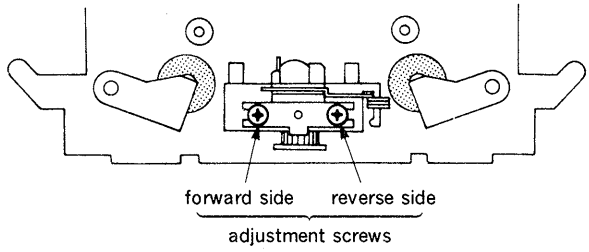


3. Playback Mode



4. Change the forward playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screws with suitable locking compound.

Adjustment Location : —record/playback head—

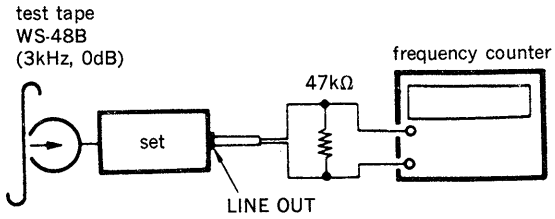


Tape Speed Adjustment DECK A DECK B

Perform high speed adjustment before normal speed adjustment.

Procedure :

—Forward Playback Mode—



(high speed adjustment)

1. Short the connector TP1 (pins ① and ②). (test mode)
2. Keep on pressing the SYNCHRO DUBBING HIGH switch.
3. Adjust each RV72 so that the frequency counter reading becomes within adjustment limits of 6,000±20Hz on both of deck A and deck B.
4. Change the reverse playback mode and repeat the steps 2 and 3.

(normal speed adjustment)

5. After adjustment, open the connector TP1.
6. Keep on pressing the SYNCHRO DUBBING NORM switch.
7. Adjust each RV71 so that the frequency counter reading becomes within adjustment limits of 3,000±10Hz on both of deck A and deck B.
8. Change the reverse playback mode and repeat the steps 6 and 7.

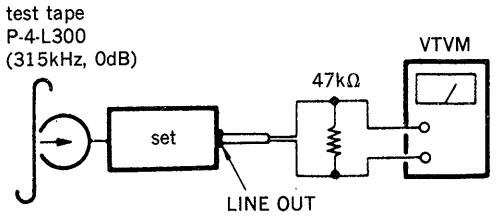
Frequency difference between the beginning and the end of the tape should be within 3%.
Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

Adjustment Location : MD HX board

Playback Level Adjustment DECK A DECK B

Procedure :

—Forward Playback Mode—



Adjust each RV11 (L-CH) and RV21 (R-CH) so that the VTVM reading becomes within adjustment limits below on both of deck A and deck B.

Adjustment Limits :

LINE OUT level : −7.7±0.5dB (0.301 to 0.338V)

Level difference between channels : within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

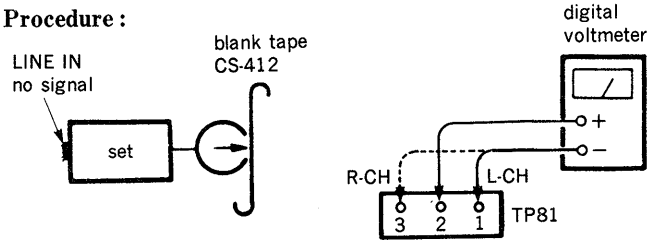
Adjustment Location : MD HX board

Bias Consumption Current Adjustment

DECK A DECK B

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T81, T91).

Procedure :



1. Connect the digital voltmeter to test point TP81.
2. Set RV81 (L-CH) and RV91 (R-CH) to mechanical center.
3. Set to forward record mode.
4. Adjust T81 (L-CH) and T91 (R-CH) so that the digital voltmeter reading becomes minimum.

Adjustment Location : MD HX board

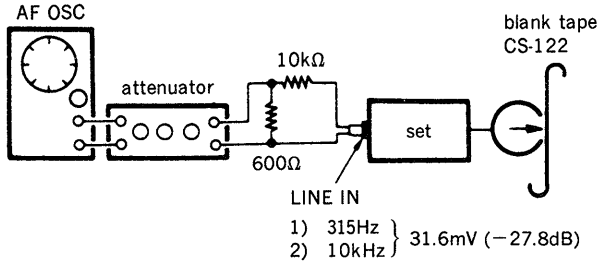
Record Bias Adjustment DECK A DECK B

Setting :

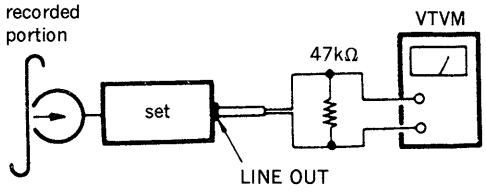
REC LEVEL control : standard record position (Refer to page 8.)

Procedure :

1. Record Mode



2. Playback Mode



3. Playback the signal recorded in step 1, and confirm that the 10kHz playback output level is VTVM reading becomes within adjustment limits below relative to the 315Hz output.
4. If the adjustment limits are not satisfied, adjust each RV81 (L-CH) and RV91 (R-CH) so that the VTVM reading becomes within adjustment limits below.

Adjustment Limits :

10kHz playback output
relative to the 315Hz output : 0±0.5dB
(0.732 to 0.821V)

Adjustment Location : MD HX board

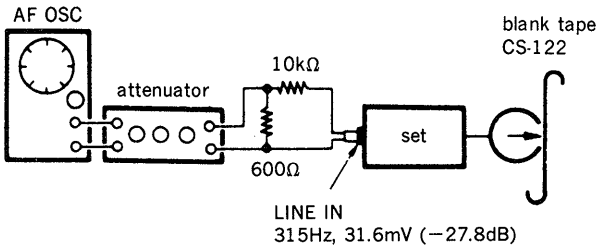
Record Level Adjustment DECK A DECK B

Setting :

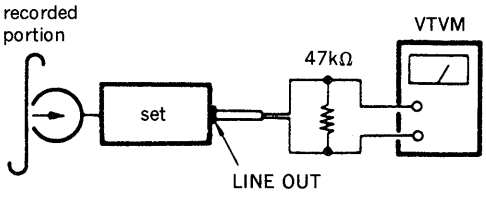
REC LEVEL control : standard record position (Refer to page 8.)

Procedure :

1. Record Mode



2. Playback Mode



(deck A)

3. Playback the signal recorded in step 1, and confirm that the playback output level is VTVM reading becomes within adjustment limits below.
4. If the adjustment limits are not satisfied, adjust each RV301 (L-CH) and RV401 (R-CH) so that the VTVM reading becomes within adjustment limits below.

(deck B)

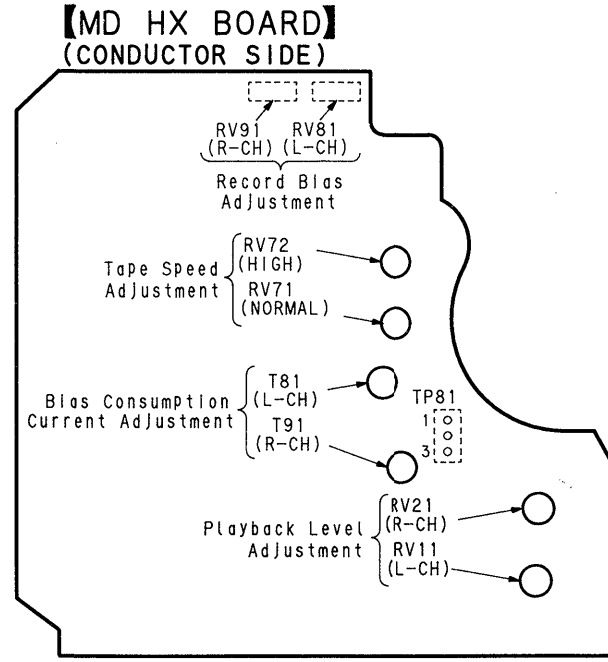
5. Similarly, playback the signal recorded in step 1, and confirm that the playback output level is VTVM reading becomes within adjustment limits below.
6. If the adjustment limits are not satisfied, adjust each RV351 (L-CH) and RV451 (R-CH) so that the VTVM reading becomes within adjustment limits below.

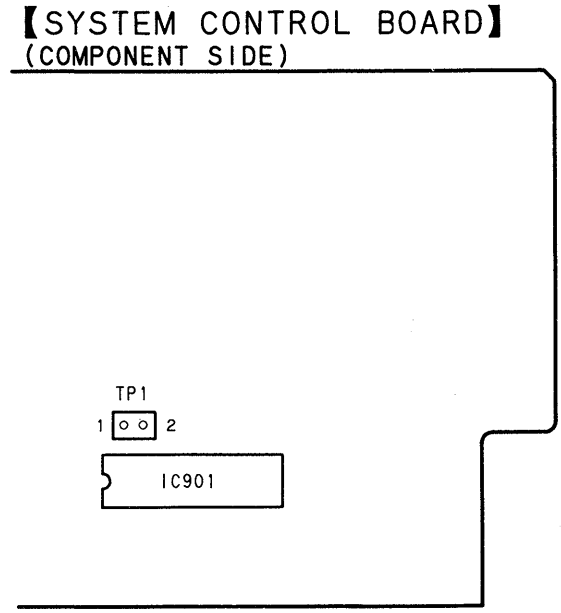
Adjustment Limits :

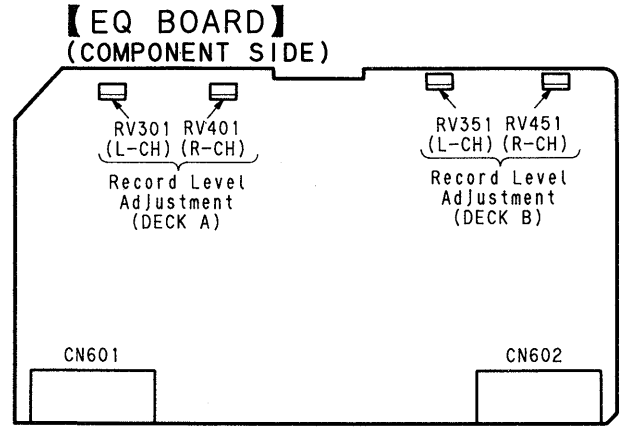
315Hz playback output level : −27.7±0.5dB (30.2 to 33.8mV)

Adjustment Location : EQ board

Adjustment Location :

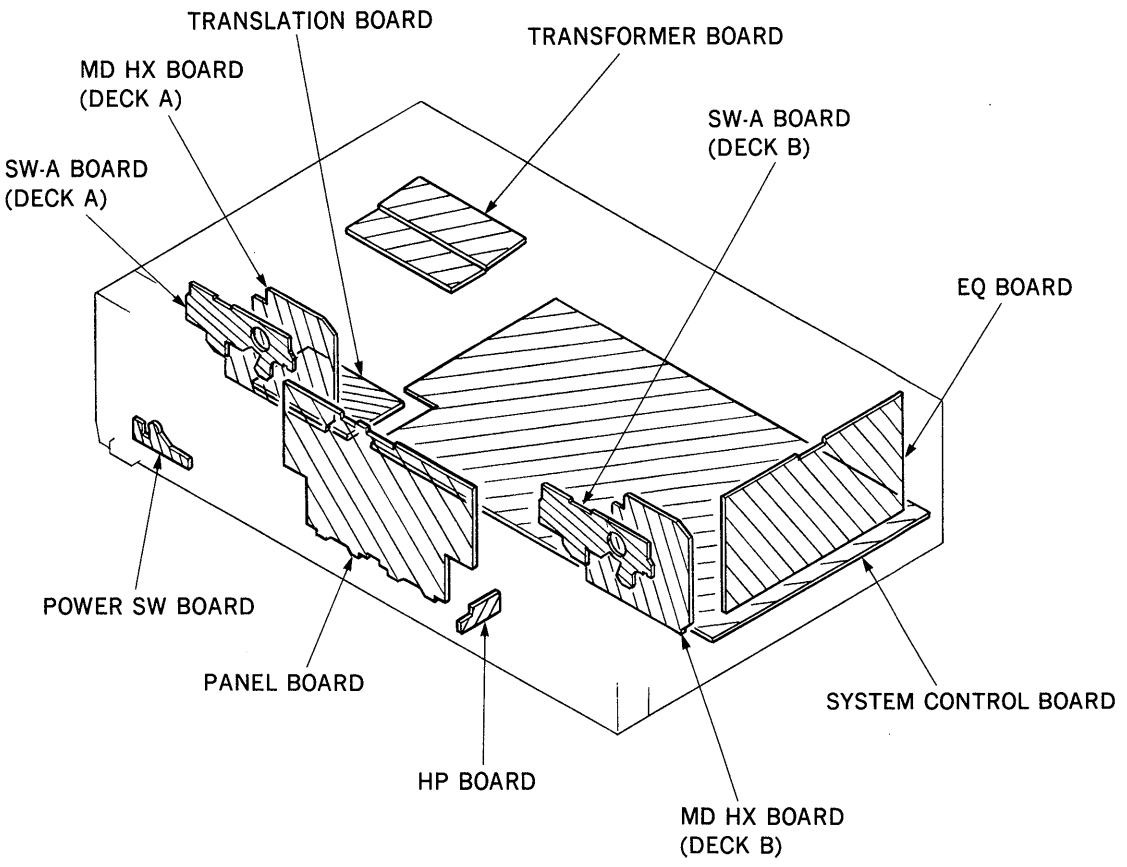






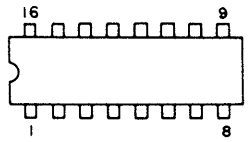
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOADS LOCATION



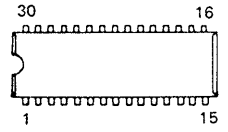
5-2. SEMICONDUCTOR LEAD LAYOUTS

CXA1198AP
MC14051BCP
MC14052BCP
TC4050BP
μPD4053BC



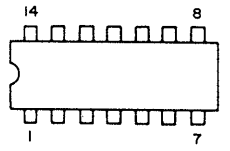
(TOP VIEW)

CXA1331S
M50925-482SP



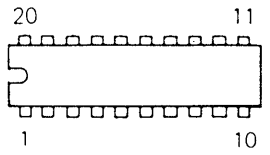
(Top view)

HC14066BCP



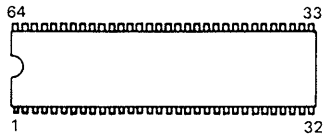
(TOP VIEW)

M50255P



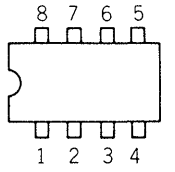
(Top view)

M50941-714-SP



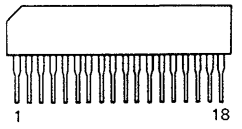
(Top view)

M5218AP
RC4558P

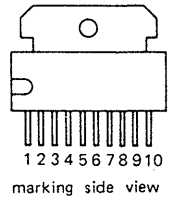


(Top view)

RBA-402

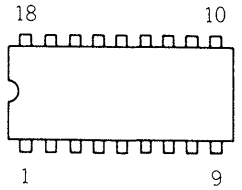


TA7272P



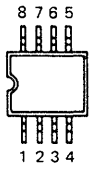
marking side view

μPC1297CA



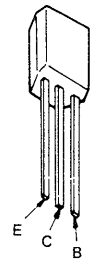
(Top view)

μPC4570G2

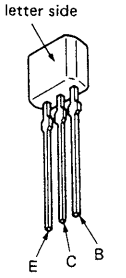


(TOPVIEW)

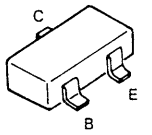
DTA114ES
DTA144ES
DTC114ES
DTC143TS
2SA1317-STU
2SC2603-EF
2SD1012-FG
2SD2144S



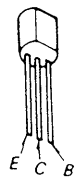
DTC144ES
DTC144WS



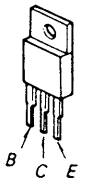
2SA1162



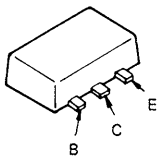
2SB1013-4



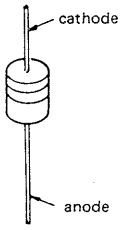
2SB1094-LK
2SD2012



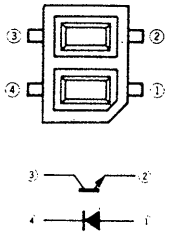
2SD1622-S



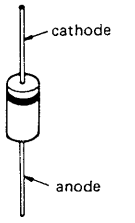
HZS6A1L
HZS7A1L
HZS9A2L



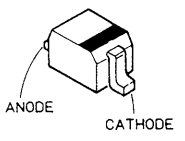
NJL5165K-B



1S4148M
10E2N



1SS352



TC-WR690/WR790 TC-WR690/WR790

TC-WR690/WR790 TC-WR690/WR790

• Semiconductor Location

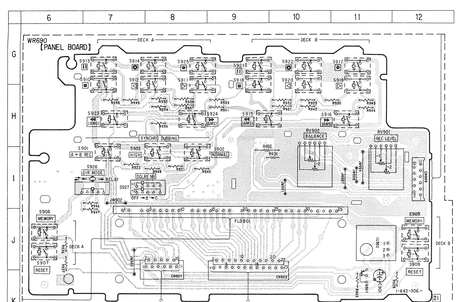
EXCEPT MD HX BOARD

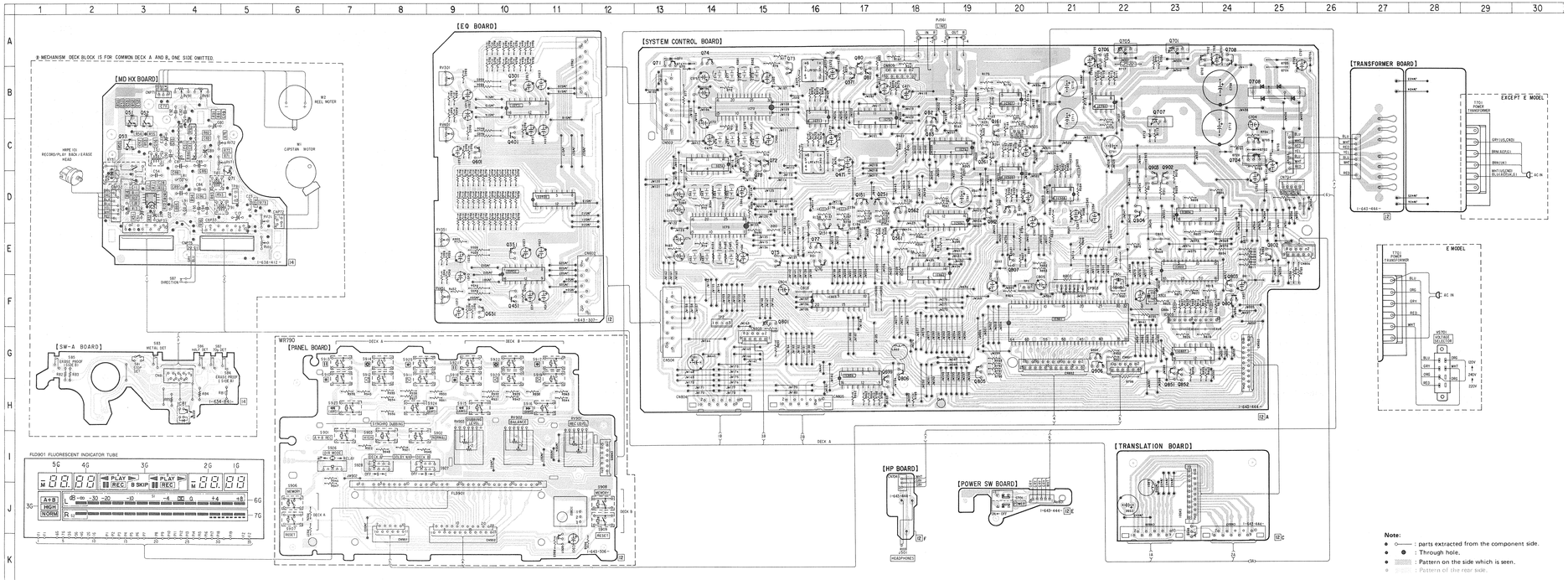
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D71	A-13	IC506	D-19	Q161	C-19	Q898	J-23
D72	E-16	IC507	B-20	Q231	E-17	Q899	H-17
D73	B-14	IC508	D-21	Q251	D-17	Q901	K-11
D74	A-14	IC509	D-20	Q261	C-19	Q902	D-23
D75	E-16	IC601	B-10	Q301	B-10	Q903	D-23
D76	E-16	IC602	E-10	Q351	E-10	Q904	D-22
D191	C-20	IC603	D-11	Q371	B-17	Q905	G-21
D291	D-20	IC701	B-21	Q401	C-10	Q906	G-21
D561	D-19	IC802	E-23	Q451	F-10		
D601	E-20	IC803	F-16	Q471	C-16		
D602	E-20	IC804	D-23	Q561	E-18		
D701	A-24	IC805	F-23	Q562	D-18		
D702	C-24	IC806	G-17	Q601	C-9		
D703	C-25	IC807	G-23	Q651	F-10		
D704	B-25	IC862	F-18	Q701	A-23		
D705	A-25	IC901	F-21	Q702	A-23		
D706	A-25	IC902	J-11	Q703	C-24		
D708	B-25			Q704	C-24		
D709	A-21	Q71	A-13	Q705	A-22		
D712	C-22	Q72	C-15	Q706	A-21		
D713	C-25	Q73	A-15	Q707	C-23		
D720	C-24	Q74	A-14	Q708	A-24		
D801	E-20	Q75	E-15	Q801	F-15		
D811	F-24	Q76	E-16	Q802	E-25		
D812	E-24	Q77	E-16	Q803	F-24		
		Q78	C-15	Q804	F-24		
IC71	B-16	Q79	C-15	Q805	G-19		
IC72	B-15	Q80	B-17	Q806	G-18		
IC73	E-14	Q81	B-17	Q807	E-20		
IC74	C-14	Q82	C-18	Q851	G-23		
IC75	B-17	Q83	C-18	Q852	G-23		
IC76	C-19	Q131	E-16	Q861	D-20		
IC81	H-4	Q151	D-17	Q862	D-19		

• MD HX BOARD

Ref. No.	Location
D31	D-2
IC31	D-3
IC81	C-4
Q51	B-3
Q52	B-3
Q53	C-3
Q71	D-5

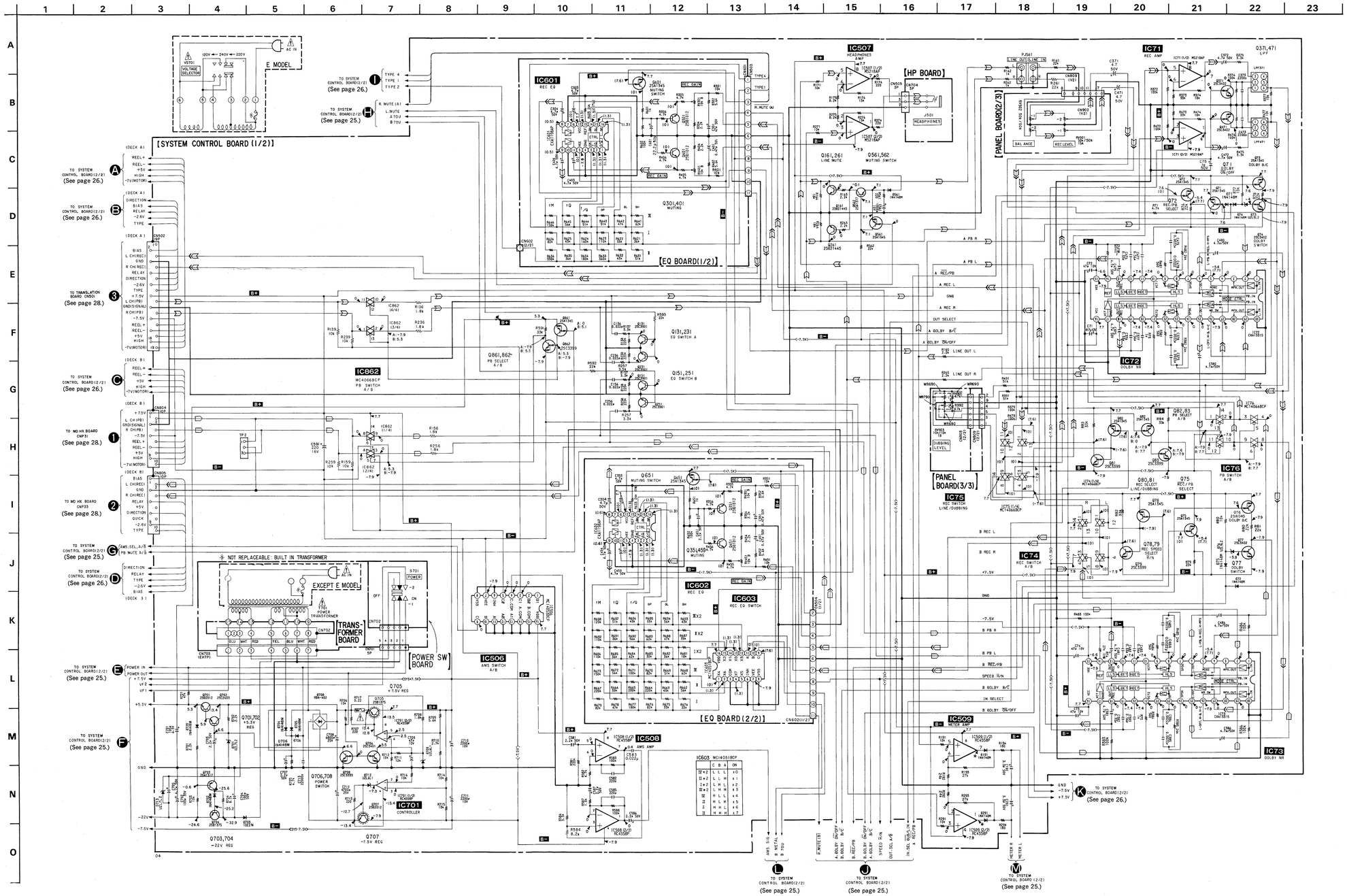
5-3. PRINTED WIRING BOARDS • Refer to Page 13 for Semiconductor Lead Layouts.



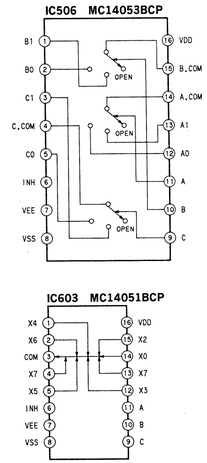


Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.


[SYSTEM CONTROL BOARD (1/2)]
E MODEL
AC IN
120V 240V 220V
VOLTAGE DELECTOR
[EQ BOARD(1/2)]
[EQ BOARD(2/2)]
[HP BOARD]
[PANEL BOARD(2/3)]
[PANEL BOARD(3/3)]
[POWER SW BOARD]
TRANS-FORMER BOARD
NOT REPLACEABLE · BUILT IN TRANSFORMER
EXCEPT E MODEL
IC507 HEADPHONES AMP
IC601 REC EQ
IC602 REC EQ
IC603 REC EQ SWITCH
IC862 MC4066BCP PB SWITCH A/B
IC506 AMS SWITCH A/B
IC508 REC/PB AMP
IC701 CONTROLLER
IC71 REC AMP
IC72 DOLBY NR
IC73 DOLBY NR
IC74 REC SWITCH A/B
IC75 REC SWITCH LINE/DUBBING
IC76 PB SWITCH A/B
IC503 METER AMP
IC603 MC14051BCP
Q703,704 −22V REG
Q706,708 POWER SWITCH
Q707 −7.5V REG
Q705 +7.5V REG
Q701,702 +5.5V REG
Q301,401 MUTING
Q351,451 MUTING
Q561,562 MUTING SWITCH
Q161,261 LINE MUTE
Q131,231 EQ SWITCH A
Q151,251 EQ SWITCH B
Q861,862 PB SELECT A/B
Q651 MUTING SWITCH
Q371,471 LPF
Q82,83 REC SELECT LINE/DUBBING
Q78,79 REC SPEED SELECT R/N
Q80,81 REC SELECT LINE/DUBBING
Q75 REC/PB SELECT
Q76 DOLBY B/C
Q77 DOLBY SWITCH
Q72 REC/PB SELECT
Q71 DOLBY B/C
TO SYSTEM CONTROL BOARD(1/2) (See page 26.)
TO SYSTEM CONTROL BOARD(1/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 26.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 26.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 26.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 26.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 25.)
TO SYSTEM CONTROL BOARD(2/2) (See page 26.)
TO TRANSLATION BOARD CN504 (See page 28.)
TO MD HX BOARD CNP31 (See page 28.)
TO MD HX BOARD CNP33 (See page 28.)

• IC Block Diagrams

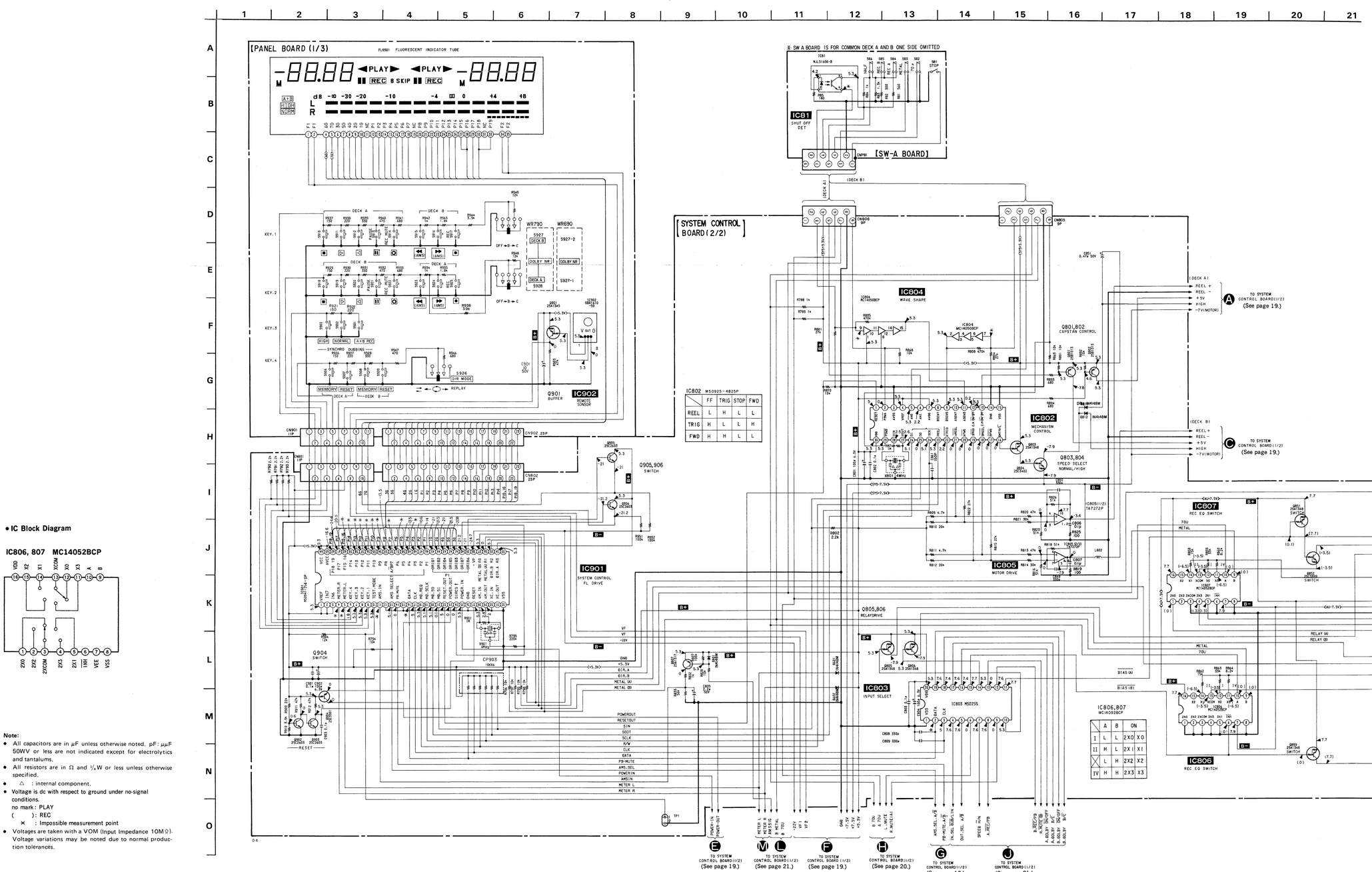


Note:

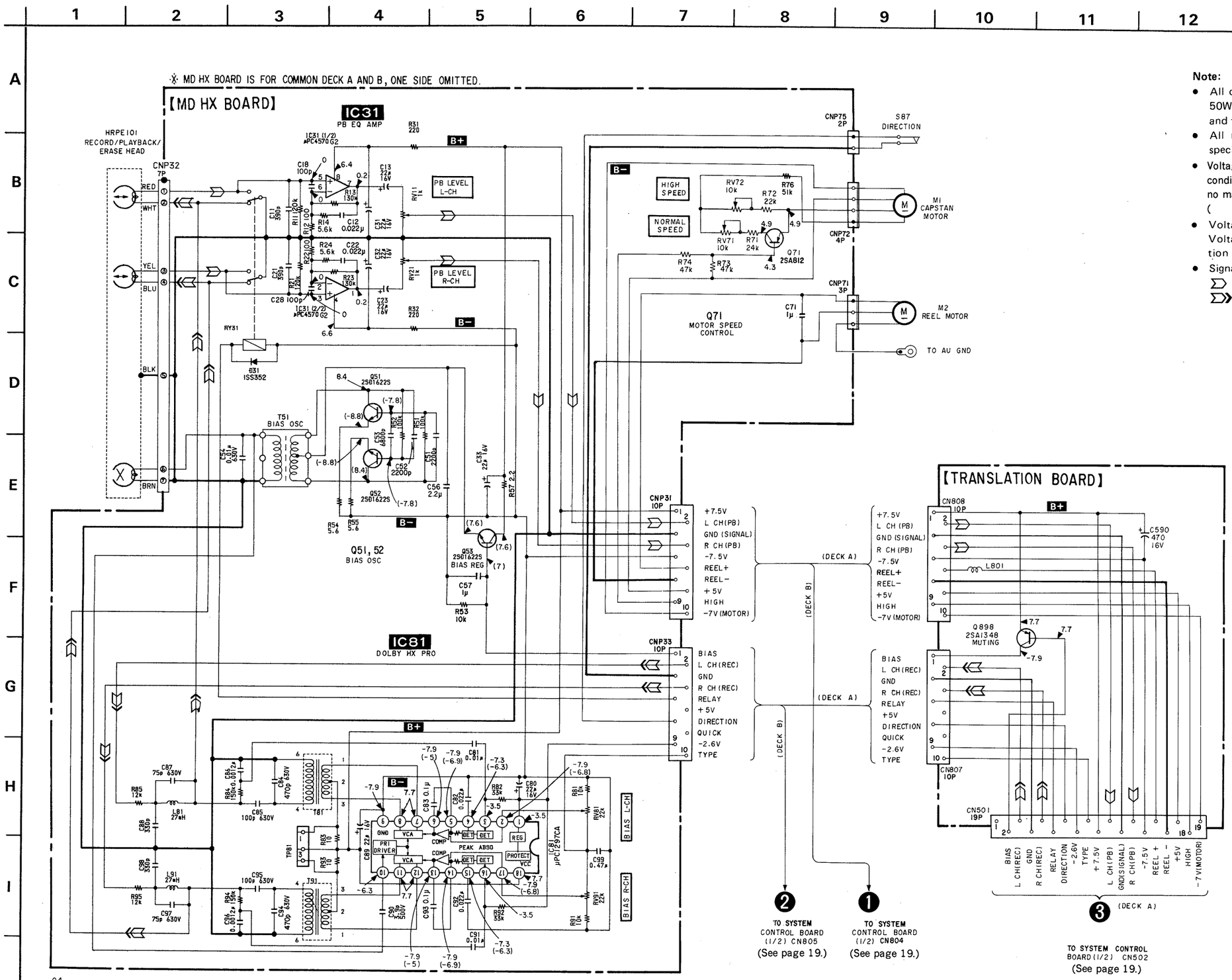
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- ⚠: fusible resistor.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▭: adjustment for repair.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark: PLAY
  ( ): REC
  A: DECK A
  B: DECK B
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷: PB (DECK A)
  ▷▷: REC (DECK A)
  ▷: PB (DECK B)
  ▷: REC (DECK B)


[PANEL BOARD (1/3)
FL6901 FLUORESCENT INDICATOR TUBE
[SYSTEM CONTROL BOARD (2/2)]
※ SW A BOARD IS FOR COMMON DECK A AND B ONE SIDE OMITTED
[SW-A BOARD]
IC801
IC802 MECHANISM CONTROL
IC803 INPUT SELECT
IC804 WAVE SHAPE
IC805 MOTOR DRIVE
IC806 REC EQ SWITCH
IC807 REC EQ SWITCH
IC901 SYSTEM CONTROL FL DRIVE
IC902 REMOTE SENSOR
Q801,802 CAPSTAN CONTROL
Q803,804 SPEED SELECT NORMAL/HIGH
Q805,806 RELAYDRIVE
Q901 BUFFER
Q904 SWITCH
Q905,906 SWITCH
IC802 MS0925-4825P
IC806,807 MC14052BCP
• IC Block Diagram
Note:
• All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantaliums.
• All resistors are in Ω and 1/4W or less unless otherwise specified.
• △ : internal component.
• Voltage is dc with respect to ground under no-signal conditions.
no mark : PLAY
( ) : REC
※ : Impossible measurement point
• Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
TO SYSTEM CONTROL BOARD(1/2) (See page 19.)
TO SYSTEM CONTROL BOARD(1/2) (See page 21.)
TO SYSTEM CONTROL BOARD(1/2) (See page 19.)
TO SYSTEM CONTROL BOARD(1/2) (See page 20.)
TO SYSTEM CONTROL BOARD(1/2) (See page 19.)
TO SYSTEM CONTROL BOARD(1/2) (See page 21.)
TO SYSTEM CONTROL BOARD(1/2) (See page 19.)
TO SYSTEM CONTROL BOARD(1/2) (See page 19.)
TO SYSTEM CONTROL BOARD(1/2) (See page 20.)
TO SYSTEM CONTROL BOARD(1/2) (See page 19.)

5-6. SCHEMATIC DIAGRAM—MD SECTION—



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark: PLAY
  ( ): REC
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC

SECTION 6
EXPLODED VIEWS

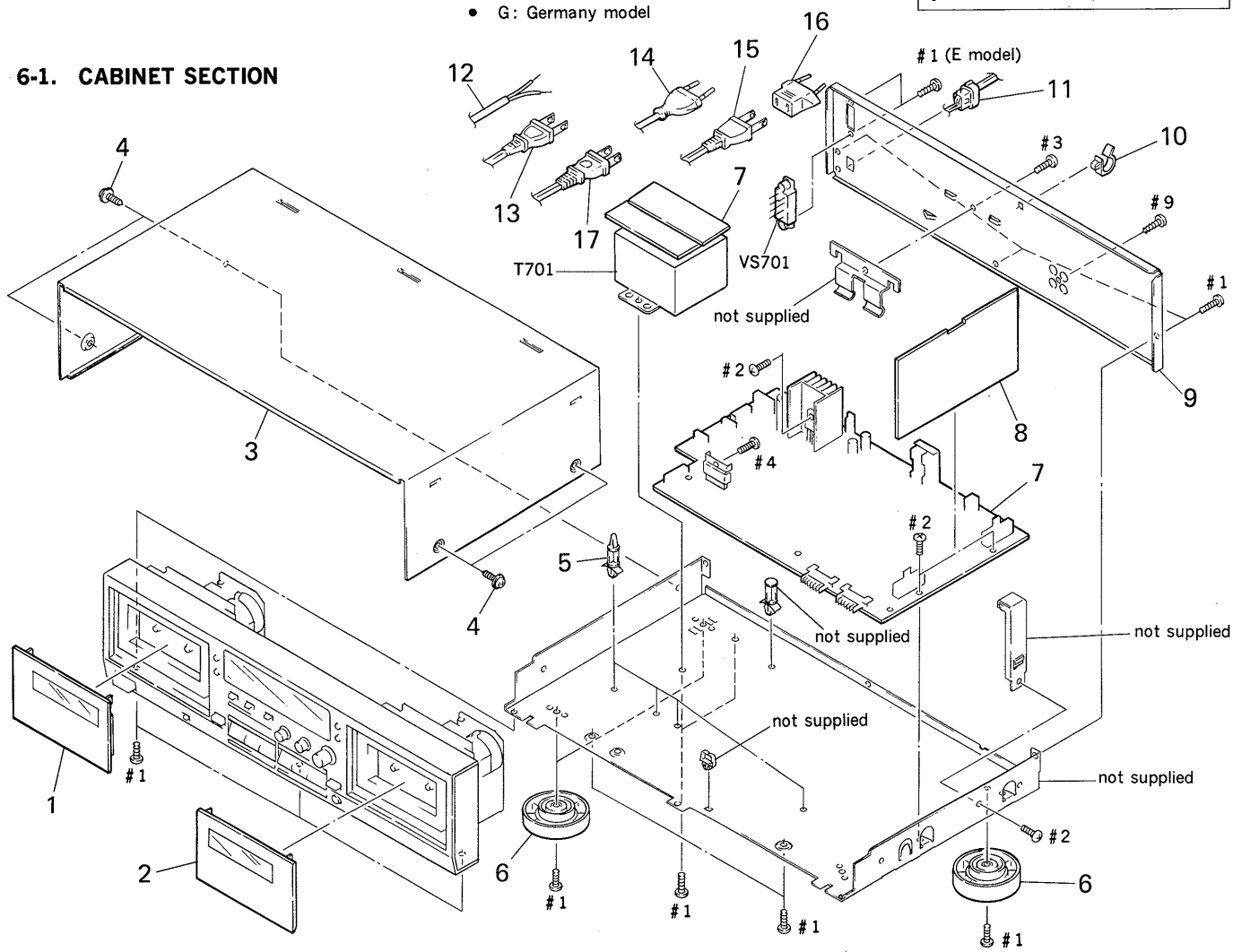
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.
- G: Germany model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

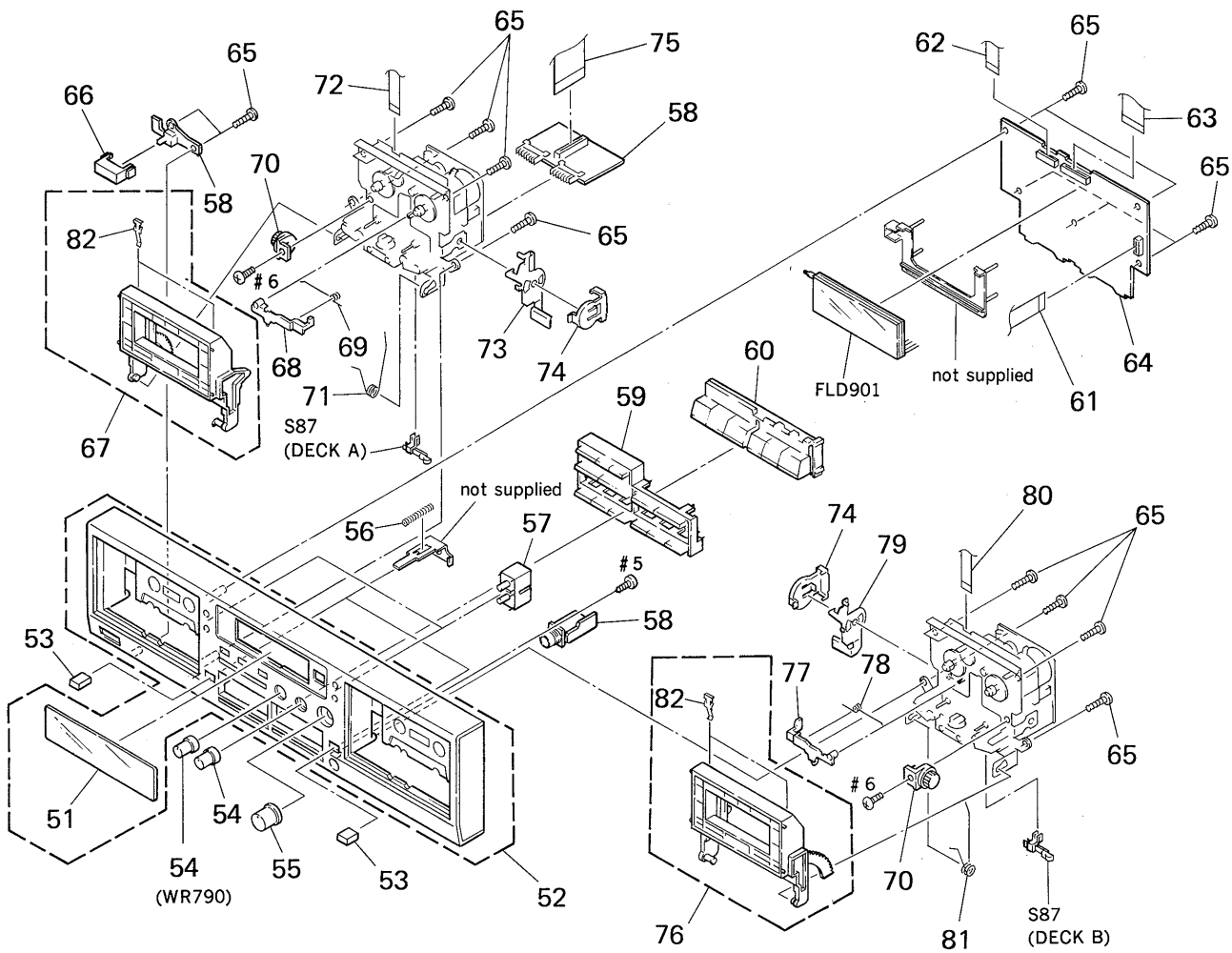
6-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-3364-740-1	LID (A) ASSY, CASSETTE	
2	X-3364-741-1	LID (B) ASSY, CASSETTE	
3	3-332-578-61	CASE	
4	3-704-366-01	SCREW (CASE) (M3X8)	
* 5	3-346-265-11	HOLDER, PC BOARD	
6	4-943-148-32	FOOT (F58175SW) (US, Canadian)	
6	4-943-148-42	FOOT (F58175 SW) (AEP, UK, E, G)	
* 7	A-2006-827-A	SYSTEM CONTROL BOARD, COMPLETE	
* 8	A-2006-752-A	PANEL BOARD, COMPLETE (WR790)	
* 8	A-2006-834-A	PANEL BOARD, COMPLETE (WR690)	
* 9	3-377-351-01	PANEL, BACK (WR690:US, Canadian)	
* 9	3-377-351-11	PANEL, BACK (WR690:G)	
* 9	3-377-351-21	PANEL, BACK (WR690:AEP)	
* 9	3-377-351-31	PANEL, BACK (WR690:UK)	
* 9	3-377-351-41	PANEL, BACK (WR690:E)	
* 9	3-377-352-11	PANEL, BACK (WR790:US, Canadian)	

Ref. No.	Part No.	Description	Remark
* 9	3-377-352-21	PANEL, BACK (WR790:G)	
* 9	3-377-352-31	PANEL, BACK (WR790:AEP)	
* 9	3-377-352-41	PANEL, BACK (WR790:UK)	
* 10	4-949-235-01	HOOK	
11	3-703-244-00	BUSHING (2104), CORD (Canadian, AEP, UK, G)	
* 11	3-703-571-11	BUSHING (S) (4516), CORD (US, E)	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠13	1-558-945-11	CORD, POWER (POLAR. SPT-1) (US)	
⚠14	1-555-795-00	CORD, POWER, EULO PLUG (AEP, G)	
⚠15	1-551-188-XX	CORD, POWER (E)	
⚠16	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠17	1-590-836-31	CORD, POWER (Canadian)	
⚠T701	1-450-863-11	TRANSFORMER, POWER (E)	
⚠T701	1-450-869-11	TRANSFORMER, POWER (US, Canadian)	
⚠T701	1-450-870-11	TRANSFORMER, POWER (AEP, UK, G)	
⚠VS701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	

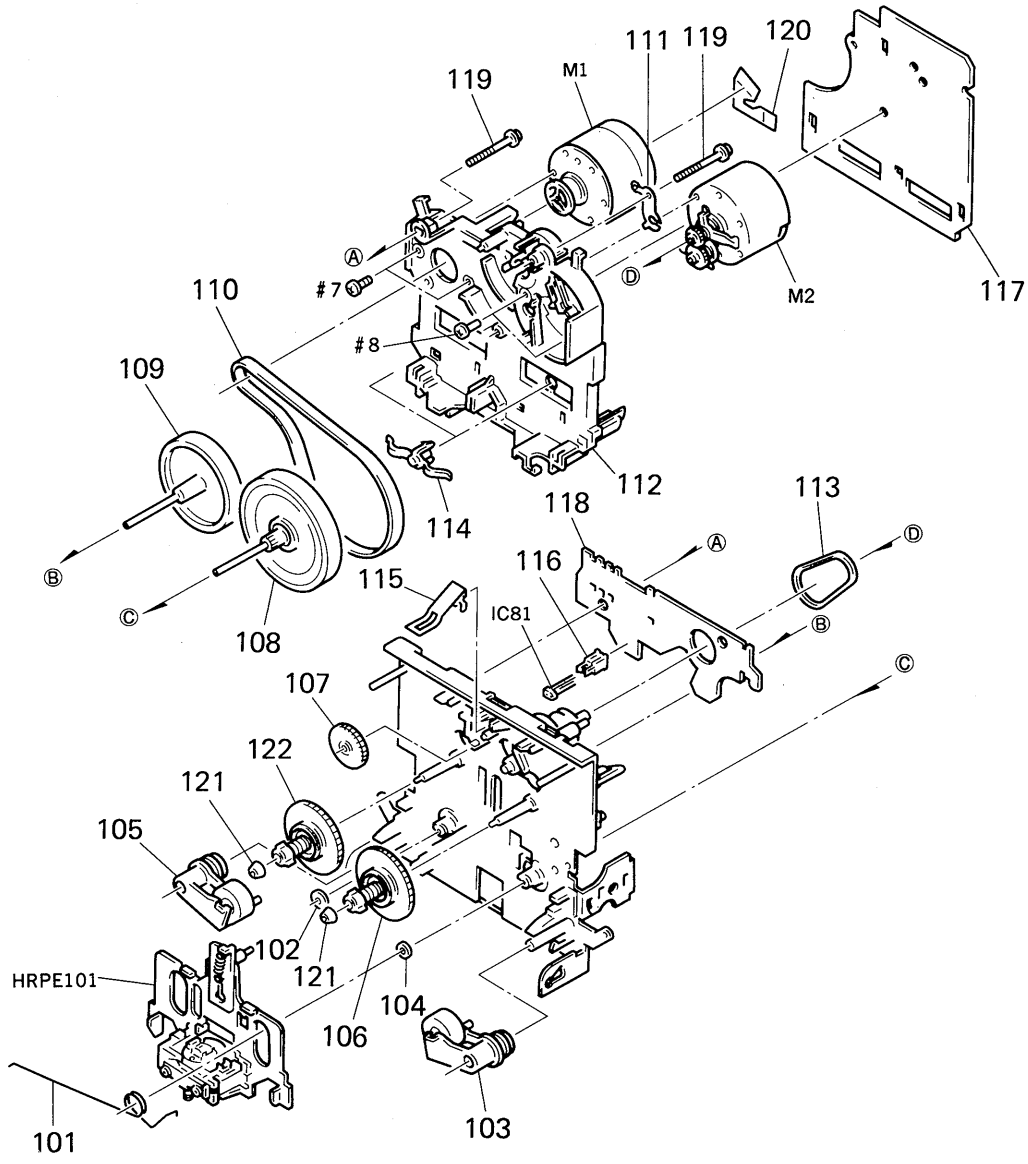
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-377-335-01	WINDOW (M) (AEP, UK, E, G)	
51	3-377-335-11	WINDOW (M) (US, Canadian)	
52	X-3364-750-1	PANEL ASSY, FRONT (WR690:US, Canadian)	
52	X-3364-751-1	PANEL ASSY, FRONT (WR690:AEP, UK, E, G)	
52	X-3364-763-1	PANEL ASSY, FRONT (WR790:US, Canadian)	
52	X-3364-764-1	PANEL ASSY, FRONT (WR790:AEP, UK, G)	
53	3-377-328-01	BUTTON (EJECT)	
54	3-367-431-01	KNOB (BAL)	
55	3-377-334-01	KNOB (REC)	
56	3-359-906-01	SPRING, COMPRESSION	
57	3-377-329-11	BUTTON (COUNTER)	
* 58	A-2006-827-A	SYSTEM CONTROL BOARD, COMPLETE	
59	3-377-342-01	BUTTON (WR)	
60	3-377-339-01	BUTTON (FR)	
61	1-690-915-11	WIRE, SHIELD (FLAT TYPE) (11CORE)	
62	1-690-911-11	WIRE (FLAT TYPE) (11 CORE)	
63	1-690-910-11	WIRE (FLAT TYPE) (23 CORE)	
* 64	A-2006-752-A	PANEL BOARD, COMPLETE (WR790)	
* 64	A-2006-834-A	PANEL BOARD, COMPLETE (WR690)	
65	4-951-620-01	SCREW (2.6X8), +BVTP	

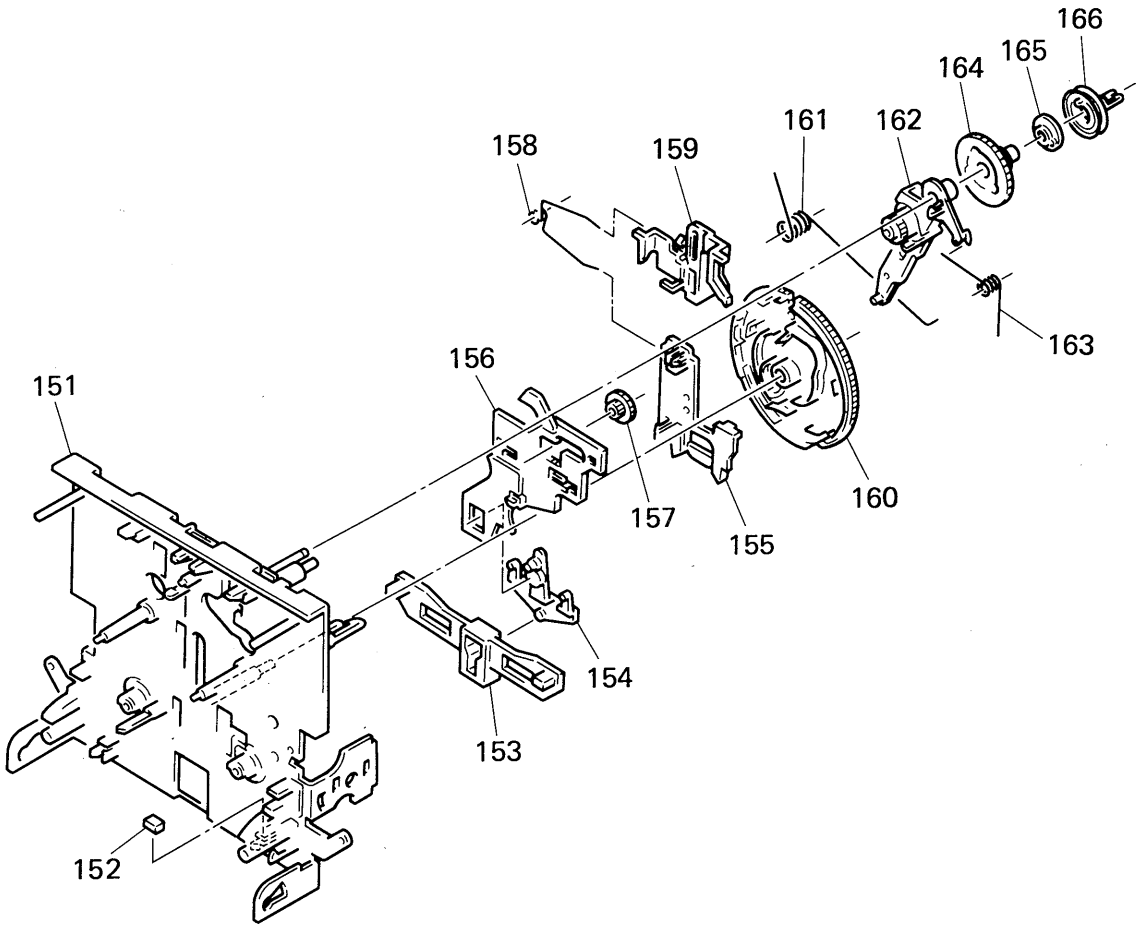
Ref. No.	Part No.	Description	Remark
66	3-354-932-01	BUTTON (POWER)	
67	X-3340-195-1	HOLDER (R) ASSY, CASSETTE	
68	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
69	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
70	3-354-963-01	DAMPER	
71	3-354-960-01	SPRING (LOADING R), TORSION	
72	1-575-781-11	WIRE, FLAT TYPE (9 CORE)	
* 73	3-354-954-01	LEVER (LOCK LEVER R)	
74	3-354-957-01	JOINT (LOCK LEVER)	
75	1-690-422-11	WIRE, FLAT TYPE (19 CORE)	
76	X-3340-194-1	HOLDER (L) ASSY, CASSETTE	
77	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
78	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
* 79	3-354-953-01	LEVER (LOCK LEVER L)	
80	1-690-906-21	WIRE (FLAT TYPE) (9 CORE)	
81	3-354-959-01	SPRING (LOADING L), TORSION	
82	3-308-823-11	SPRING	
FLD901	1-519-712-11	INDICATOR TUBE, FLUORESCENT	
S87	1-572-393-11	SWITCH, LEAF (DIRECTION)	

6-3. MECHANISM SECTION (1)
(DECK, A,B : TCM-190RB12CJ)



Ref. No.	Part No.	Description	Remark
101	3-359-455-01	SPRING, TORSION	
102	3-356-714-01	WASHER	
103	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
104	3-356-713-01	WASHER	
105	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
106	X-3359-404-1	TABLE ASSY, REEL	
107	3-359-424-01	GEAR (REV GEAR)	
108	X-3364-554-1	FLYWHEEL (FWD) ASSY	
109	X-3359-410-1	FLYWHEEL (REV) ASSY	
110	3-359-417-01	BELT (FLAT), CAPSTAN	
111	3-359-450-01	PLATE, GROUND	
* 112	3-359-436-01	BASE (THRUST RETAINER), FITTING	
113	3-359-466-01	BELT (FR), SQUARE	
114	3-575-321-00	RETAINER, THRUST, CAPSTAN	
115	3-359-430-01	SPRING(CASSETTE RETAINER), LEAF	
116	3-343-419-01	HOLDER (S SENSOR A)	
* 117	A-2006-828-A	MD HX BOARD, COMPLETE	
* 118	1-634-841-14	SW-A BOARD	
119	3-359-414-01	SCREW (+PTPWH 2X23)	
120	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
121	3-362-308-01	CAP (REEL)	
122	X-3362-078-1	TABLE ASSY (B), REEL	
HRPE101	A-2003-838-A	BASE ASSY, HEAD (REC/PB/ERASE)	
IC81	8-719-710-03	DIODE NJL5165K-B	
M1	X-3359-417-1	MOTOR ASSY (CAPSTAN)	
M2	X-3363-501-1	MOTOR (REEL MOTOR) ASSY	

6-4. MECHANISM SECTION (2)
(DECK A, B : TCM-190RB12CJ)



Ref. No.	Part No.	Description	Remark
151	X-3359-415-1	CHASSIS ASSY, MECHANICAL	
152	3-359-469-01	SPACER	
* 153	3-359-425-01	SLIDER (REVERSE SLIDER)	
154	3-359-426-01	LEVER (REVERSE LEVER)	
* 155	3-359-427-01	SLIDER (LEVERSE SLIDER)	
* 156	3-359-415-01	SLIDER (TRIGGER SLIDER)	
157	3-359-448-01	GEAR (TRIGGER)	
158	3-359-454-01	SPRING, TORSION	
159	3-359-429-01	SLIDER (BRAKE PLATE)	
160	3-359-420-01	GEAR (CAM GEAR)	
161	3-359-456-01	SPRING(TRIGGER SPRING), TORSION	
162	X-3359-405-1	LEVER (FR ARM) ASSY	
163	3-359-453-01	SPRING (FR ARM), TORSION	
164	3-359-419-01	GEAR (FR GEAR)	
165	3-359-421-01	CLUTCH (REEL DISK)	
166	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 7
ELECTRICAL PARTS LIST

MD HX

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

- G: Germany model

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			Remark
*	A-2006-828-A	MD HX BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C52	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C53	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C54	1-136-601-11	FILM	0.01uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C71	1-164-346-11	CERAMIC CHIP	1uF		16V
C80	1-124-234-00	ELECT	22uF	20%	16V
C81	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C82	1-136-157-00	FILM	0.022uF	5%	50V
C83	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C84	1-136-478-11	FILM	470PF	5%	630V
C85	1-136-433-11	FILM	100PF	5%	630V
C86	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C87	1-136-273-91	FILM	75PF	5%	630V
C88	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C89	1-124-234-00	ELECT	22uF	20%	16V
C90	1-107-045-00	MICA	3.9PF		500V
C91	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C92	1-136-157-00	FILM	0.022uF	5%	50V
C93	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C94	1-136-478-11	FILM	470PF	5%	630V
C95	1-136-433-11	FILM	100PF	5%	630V
C96	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C97	1-136-273-91	FILM	75PF	5%	630V
C98	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C99	1-164-005-11	CERAMIC CHIP	0.47uF		25V
		< CONNECTOR >			
* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P			
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P			
* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P			
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
* CNP72	1-580-411-11	SOCKET, CONNECTOR 4P			
* CNP75	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
		< DIODE >			
D31	8-719-016-74	DIODE 1SS352			
		< IC >			
IC31	8-759-106-02	IC uPC4570G2			
IC81	8-759-106-56	IC uPC1297CA			
		< COIL >			
L81	1-410-780-11	INDUCTOR	27mH		
L91	1-410-780-11	INDUCTOR	27mH		
		< TRANSISTOR >			
Q51	8-729-808-01	TRANSISTOR	2SD1622-S		
Q52	8-729-808-01	TRANSISTOR	2SD1622-S		
Q53	8-729-808-01	TRANSISTOR	2SD1622-S		
Q71	8-729-216-22	TRANSISTOR	2SA1162		
		< RESISTOR >			
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W

MD HX PANEL

Ref. No.	Part No.	Description			Remark
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R51	1-216-097-00	METAL CHIP	100K	5%	1/10W
R52	1-216-097-00	METAL CHIP	100K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R57	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W
R76	1-216-090-00	METAL CHIP	51K	5%	1/10W
R81	1-216-073-00	METAL CHIP	10K	5%	1/10W
R82	1-216-085-00	METAL CHIP	33K	5%	1/10W
R83	1-216-001-00	METAL CHIP	10	5%	1/10W
R84	1-216-101-00	METAL CHIP	150K	5%	1/10W
R85	1-216-075-00	METAL CHIP	12K	5%	1/10W
R91	1-216-073-00	METAL CHIP	10K	5%	1/10W
R92	1-216-085-00	METAL CHIP	33K	5%	1/10W
R93	1-216-001-00	METAL CHIP	10	5%	1/10W
R94	1-216-101-00	METAL CHIP	150K	5%	1/10W
R95	1-216-075-00	METAL CHIP	12K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-241-627-11	RES, ADJ, CARBON 1K			
RV21	1-241-627-11	RES, ADJ, CARBON 1K			
RV71	1-241-630-11	RES, ADJ, CARBON 10K			
RV72	1-241-630-11	RES, ADJ, CARBON 10K			
RV81	1-241-122-11	RES, ADJ, CARBON 22K			
RV91	1-241-122-11	RES, ADJ, CARBON 22K			
		< RELAY >			
RY31	1-515-726-11	RELAY			
		< TRANSFORMER >			
T51	1-406-417-11	COIL, BIAS OSCILLATION			
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
		< TEST PIN >			
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD) 3P			

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Ref. No.	Part No.	Description			Remark
*	A-2006-834-A	PANEL BOARD, COMPLETE (WR690)			
*	A-2006-752-A	PANEL BOARD, COMPLETE (WR790)			
		**********			
		< CAPACITOR >			
C301	1-124-902-00	ELECT	0.47uF	20%	50V
C303	1-124-927-11	ELECT	4.7uF	20%	100V
C304	1-124-927-11	ELECT	4.7uF	20%	100V
C351	1-124-902-00	ELECT	0.47uF	20%	50V
C353	1-124-927-11	ELECT	4.7uF	20%	100V
C354	1-124-927-11	ELECT	4.7uF	20%	100V
C401	1-124-902-00	ELECT	0.47uF	20%	50V
C403	1-124-927-11	ELECT	4.7uF	20%	100V
C404	1-124-927-11	ELECT	4.7uF	20%	100V
C451	1-124-902-00	ELECT	0.47uF	20%	50V
C453	1-124-927-11	ELECT	4.7uF	20%	100V
C454	1-124-927-11	ELECT	4.7uF	20%	100V
C601	1-124-925-11	ELECT	2.2uF	20%	100V
C651	1-124-925-11	ELECT	2.2uF	20%	100V
C901	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN601	1-573-979-11	CONNECTOR, BOARD TO BOARD 11P			
* CN602	1-573-979-11	CONNECTOR, BOARD TO BOARD 11P			
* CN901	1-568-854-11	SOCKET, CONNECTOR 11P			
* CN902	1-568-865-11	SOCKET, CONNECTOR 23P			
* CN903	1-568-830-11	SOCKET, CONNECTOR 11P			
		< FLUORESCENT INDICATOR >			
FLD901	1-519-712-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC601	8-752-060-64	IC CXA1198AP			
IC602	8-752-060-64	IC CXA1198AP			
IC603	8-759-000-47	IC MC14051BCP			
IC902	8-741-100-48	IC SBX1610-59			
		< TRANSISTOR >			
Q301	8-729-821-31	TRANSISTOR 2SD1012-FG			
Q351	8-729-821-31	TRANSISTOR 2SD1012-FG			
Q401	8-729-821-31	TRANSISTOR 2SD1012-FG			
Q451	8-729-821-31	TRANSISTOR 2SD1012-FG			
Q601	8-729-900-65	TRANSISTOR DTA144ES			
Q651	8-729-900-65	TRANSISTOR DTA144ES			
Q901	8-729-900-65	TRANSISTOR DTA144ES			
		< RESISTOR >			
R301	1-249-429-11	CARBON	10K	5%	1/4W
R302	1-249-426-11	CARBON	5.6K	5%	1/4W

Ref. No.	Part No.	Description				Remark
R304	1-249-421-11	CARBON	2.2K	5%	1/4W	
R305	1-249-425-11	CARBON	4.7K	5%	1/4W	
R306	1-249-425-11	CARBON	4.7K	5%	1/4W	
R351	1-249-429-11	CARBON	10K	5%	1/4W	
R352	1-249-426-11	CARBON	5.6K	5%	1/4W	
R354	1-249-421-11	CARBON	2.2K	5%	1/4W	
R355	1-249-425-11	CARBON	4.7K	5%	1/4W	
R356	1-249-425-11	CARBON	4.7K	5%	1/4W	
R392	1-249-425-11	CARBON	4.7K	5%	1/4W	(WR690)
R401	1-249-429-11	CARBON	10K	5%	1/4W	
R402	1-249-426-11	CARBON	5.6K	5%	1/4W	
R404	1-249-421-11	CARBON	2.2K	5%	1/4W	
R405	1-249-425-11	CARBON	4.7K	5%	1/4W	
R406	1-249-425-11	CARBON	4.7K	5%	1/4W	
R451	1-249-429-11	CARBON	10K	5%	1/4W	
R452	1-249-426-11	CARBON	5.6K	5%	1/4W	
R454	1-249-421-11	CARBON	2.2K	5%	1/4W	
R455	1-249-425-11	CARBON	4.7K	5%	1/4W	
R456	1-249-425-11	CARBON	4.7K	5%	1/4W	
R492	1-249-425-11	CARBON	4.7K	5%	1/4W	(WR690)
R601	1-249-417-11	CARBON	1K	5%	1/4W	
R602	1-249-441-11	CARBON	100K	5%	1/4W	
R603	1-215-454-00	METAL	24K	1%	1/6W	
R621	1-247-868-11	CARBON	36K	5%	1/4W	
R622	1-249-435-11	CARBON	33K	5%	1/4W	
R623	1-247-880-11	CARBON	110K	5%	1/4W	
R624	1-247-884-11	CARBON	160K	5%	1/4W	
R625	1-247-870-11	CARBON	43K	5%	1/4W	
R626	1-249-440-11	CARBON	82K	5%	1/4W	
R631	1-247-872-11	CARBON	51K	5%	1/4W	
R632	1-247-870-11	CARBON	43K	5%	1/4W	
R633	1-247-892-11	CARBON	360K	5%	1/4W	
R634	1-247-885-00	CARBON	180K	5%	1/4W	
R635	1-247-868-11	CARBON	36K	5%	1/4W	
R636	1-247-891-00	CARBON	330K	5%	1/4W	
R641	1-247-874-11	CARBON	62K	5%	1/4W	
R642	1-249-437-11	CARBON	47K	5%	1/4W	
R643	1-247-878-00	CARBON	91K	5%	1/4W	
R644	1-247-878-00	CARBON	91K	5%	1/4W	
R645	1-249-438-11	CARBON	56K	5%	1/4W	
R646	1-247-883-00	CARBON	150K	5%	1/4W	
R651	1-249-417-11	CARBON	1K	5%	1/4W	
R652	1-249-441-11	CARBON	100K	5%	1/4W	
R653	1-215-454-00	METAL	24K	1%	1/6W	
R662	1-249-438-11	CARBON	56K	5%	1/4W	
R663	1-247-870-11	CARBON	43K	5%	1/4W	
R664	1-247-887-00	CARBON	220K	5%	1/4W	
R665	1-247-886-11	CARBON	200K	5%	1/4W	
R666	1-249-436-11	CARBON	39K	5%	1/4W	
R667	1-247-887-00	CARBON	220K	5%	1/4W	
R668	1-247-874-11	CARBON	62K	5%	1/4W	
R669	1-247-872-11	CARBON	51K	5%	1/4W	
R670	1-249-440-11	CARBON	82K	5%	1/4W	
R671	1-249-441-11	CARBON	100K	5%	1/4W	
R672	1-249-438-11	CARBON	56K	5%	1/4W	
R673	1-247-883-00	CARBON	150K	5%	1/4W	
R674	1-249-435-11	CARBON	33K	5%	1/4W	
R675	1-249-435-11	CARBON	33K	5%	1/4W	
R676	1-249-440-11	CARBON	82K	5%	1/4W	
R677	1-247-885-00	CARBON	180K	5%	1/4W	
R678	1-249-437-11	CARBON	47K	5%	1/4W	
R679	1-249-440-11	CARBON	82K	5%	1/4W	
R681	1-249-432-11	CARBON	18K	5%	1/4W	
R682	1-247-868-11	CARBON	36K	5%	1/4W	
R683	1-247-866-11	CARBON	30K	5%	1/4W	
R684	1-247-874-11	CARBON	62K	5%	1/4W	
R685	1-247-868-11	CARBON	36K	5%	1/4W	
R686	1-247-880-11	CARBON	110K	5%	1/4W	
R687	1-249-436-11	CARBON	39K	5%	1/4W	
R688	1-249-437-11	CARBON	47K	5%	1/4W	
R689	1-247-874-11	CARBON	62K	5%	1/4W	
R690	1-249-438-11	CARBON	56K	5%	1/4W	
R691	1-247-868-11	CARBON	36K	5%	1/4W	
R692	1-247-880-11	CARBON	110K	5%	1/4W	
R693	1-247-870-11	CARBON	43K	5%	1/4W	
R694	1-249-438-11	CARBON	56K	5%	1/4W	
R695	1-249-435-11	CARBON	33K	5%	1/4W	
R696	1-247-870-11	CARBON	43K	5%	1/4W	
R697	1-247-872-11	CARBON	51K	5%	1/4W	
R698	1-247-881-00	CARBON	120K	5%	1/4W	
R903	1-249-437-11	CARBON	47K	5%	1/4W	
R921	1-249-407-11	CARBON	150	5%	1/4W	
R922	1-249-409-11	CARBON	220	5%	1/4W	
R926	1-249-407-11	CARBON	150	5%	1/4W	
R927	1-249-409-11	CARBON	220	5%	1/4W	
R928	1-249-411-11	CARBON	330	5%	1/4W	
R929	1-249-407-11	CARBON	150	5%	1/4W	
R930	1-249-409-11	CARBON	220	5%	1/4W	
R931	1-249-411-11	CARBON	330	5%	1/4W	
R932	1-249-413-11	CARBON	470	5%	1/4W	
R933	1-249-415-11	CARBON	680	5%	1/4W	
R934	1-249-417-11	CARBON	1K	5%	1/4W	
R935	1-249-420-11	CARBON	1.8K	5%	1/4W	
R936	1-249-424-11	CARBON	3.9K	5%	1/4W	
R937	1-249-407-11	CARBON	150	5%	1/4W	
R938	1-249-409-11	CARBON	220	5%	1/4W	
R939	1-249-411-11	CARBON	330	5%	1/4W	
R940	1-249-413-11	CARBON	470	5%	1/4W	

PANEL | SW-A | SYSTEM CONTROL

Ref. No.	Part No.	Description			Remark
R941	1-249-415-11	CARBON	680	5% 1/4W	
R942	1-249-417-11	CARBON	1K	5% 1/4W	
R943	1-249-420-11	CARBON	1.8K	5% 1/4W	
R944	1-249-424-11	CARBON	3.9K	5% 1/4W	
R945	1-249-430-11	CARBON	12K	5% 1/4W	
R946	1-249-415-11	CARBON	680	5% 1/4W	
R947	1-249-413-11	CARBON	470	5% 1/4W	
R948	1-249-430-11	CARBON	12K	5% 1/4W	
		< VARIABLE RESISTOR >			
RV301	1-241-136-11	RES, ADJ, CARBON 10K			
RV351	1-241-136-11	RES, ADJ, CARBON 10K			
RV401	1-241-136-11	RES, ADJ, CARBON 10K			
RV451	1-241-136-11	RES, ADJ, CARBON 10K			
RV901	1-241-133-11	RES, VAR, CARBON 50K/50K (REC LEVEL)			
RV902	1-241-901-11	RES, VAR, CARBON 50K/50K (BALANCE)			
RV903	1-241-878-11	RES, VAR, CARBON 10K/10K (DUBBING LEVEL) (WR790)			
		< SWITCH >			
S901	1-554-303-21	SWITCH, TACTILE (A+B REC)			
S902	1-554-303-21	SWITCH, TACTILE (NORMAL)			
S903	1-554-303-21	SWITCH, TACTILE (HIGH)			
S906	1-554-303-21	SWITCH, TACTILE (DECK A:MEMORY)			
S907	1-554-303-21	SWITCH, TACTILE (DECK A:RESET)			
S908	1-554-303-21	SWITCH, TACTILE (DECK B:MEMORY)			
S909	1-554-303-21	SWITCH, TACTILE (DECK B:RESET)			
S910	1-554-303-21	SWITCH, TACTILE (DECK A:■)			
S911	1-554-303-21	SWITCH, TACTILE (DECK A:▷)			
S912	1-554-303-21	SWITCH, TACTILE (DECK A:◁)			
S913	1-554-303-21	SWITCH, TACTILE (DECK A:❚❚)			
S914	1-554-303-21	SWITCH, TACTILE (DECK A:○)			
S915	1-554-303-21	SWITCH, TACTILE (DECK B:◀◀(AMS))			
S916	1-554-303-21	SWITCH, TACTILE (DECK B:▶▶(AMS))			
S917	1-554-303-21	SWITCH, TACTILE (DECK B:●)			
S918	1-554-303-21	SWITCH, TACTILE (DECK B:■)			
S919	1-554-303-21	SWITCH, TACTILE (DECK B:▷)			
S920	1-554-303-21	SWITCH, TACTILE (DECK B:◁)			
S921	1-554-303-21	SWITCH, TACTILE (DECK B:❚❚)			
S922	1-554-303-21	SWITCH, TACTILE (DECK B:○)			
S923	1-554-303-21	SWITCH, TACTILE (DECK A:◀◀(AMS))			
S924	1-554-303-21	SWITCH, TACTILE (DECK A:▶▶(AMS))			
S925	1-554-303-21	SWITCH, TACTILE (DECK A:●)			
S926	1-692-126-11	SWITCH, SLIDE (DIR MODE)			
S927	1-692-126-11	SWITCH, SLIDE (DECK B:DOLBY NR)			
S928	1-692-126-11	SWITCH, SLIDE (DECK A:DOLBY NR) (WR790)			

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Ref. No.	Part No.	Description			Remark
*	1-634-841-14	SW-A BOARD			
		**********			
	3-343-419-01	HOLDER (S SENSER A)			
		< CONNECTOR >			
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P			
		< DIODE >			
IC81	8-719-710-03	DIODE	NJL5165K-B		
		< RESISTOR >			
R81	1-249-414-11	CARBON	560	5% 1/4W	
R82	1-247-818-11	CARBON	300	5% 1/4W	
R83	1-247-834-11	CARBON	1.3K	5% 1/4W	
R84	1-249-417-11	CARBON	1K	5% 1/4W	
R85	1-249-408-11	CARBON	180	5% 1/4W	
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)			
S82	1-571-281-21	SWITCH, LEAF (70u)			
S83	1-571-281-21	SWITCH, LEAF (METAL)			
S84	1-571-281-21	SWITCH, LEAF (REC A)			
S85	1-571-281-21	SWITCH, LEAF (REC B)			
S86	1-571-281-21	SWITCH, LEAF (HALF)			

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*	A-2006-827-A	SYSTEM CONTROL BOARD, COMPLETE			
		**********			
*	1-562-327-00	SOCKET, CONNECTOR 3P			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
	7-682-547-04	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C71	1-124-126-00	ELECT	47uF	20% 10V	
C72	1-124-126-00	ELECT	47uF	20% 10V	
C73	1-124-126-00	ELECT	47uF	20% 10V	
C74	1-124-126-00	ELECT	47uF	20% 10V	
C75	1-124-903-11	ELECT	1uF	20% 50V	
C136	1-136-157-00	FILM	0.022uF	5% 50V	
C156	1-136-157-00	FILM	0.022uF	5% 50V	
C191	1-123-382-00	ELECT	3.3uF	20% 100V	
C236	1-136-157-00	FILM	0.022uF	5% 50V	
C256	1-136-157-00	FILM	0.022uF	5% 50V	
C291	1-123-382-00	ELECT	3.3uF	20% 100V	
C371	1-124-927-11	ELECT	4.7uF	20% 100V	
C372	1-124-927-11	ELECT	4.7uF	20% 100V	
C373	1-161-375-00	CERAMIC	0.0022uF	20% 50V	
C375	1-124-927-11	ELECT	4.7uF	20% 100V	

Ref. No.	Part No.	Description			Remark
C376	1-136-171-00	FILM	0.33uF	5%	50V
C377	1-136-174-00	FILM	0.56uF	5%	50V
C378	1-130-475-00	MYLAR	0.0022uF	5%	50V
C379	1-130-475-00	MYLAR	0.0022uF	5%	50V
C380	1-124-927-11	ELECT	4.7uF	20%	100V
C381	1-124-927-11	ELECT	4.7uF	20%	100V
C382	1-136-171-00	FILM	0.33uF	5%	50V
C383	1-136-174-00	FILM	0.56uF	5%	50V
C384	1-130-475-00	MYLAR	0.0022uF	5%	50V
C385	1-130-475-00	MYLAR	0.0022uF	5%	50V
C386	1-124-927-11	ELECT	4.7uF	20%	100V
C471	1-124-927-11	ELECT	4.7uF	20%	100V
C472	1-124-927-11	ELECT	4.7uF	20%	100V
C473	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C475	1-124-927-11	ELECT	4.7uF	20%	100V
C476	1-136-171-00	FILM	0.33uF	5%	50V
C477	1-136-174-00	FILM	0.56uF	5%	50V
C478	1-130-475-00	MYLAR	0.0022uF	5%	50V
C479	1-130-475-00	MYLAR	0.0022uF	5%	50V
C480	1-124-927-11	ELECT	4.7uF	20%	100V
C481	1-124-927-11	ELECT	4.7uF	20%	100V
C482	1-136-171-00	FILM	0.33uF	5%	50V
C483	1-136-174-00	FILM	0.56uF	5%	50V
C484	1-130-475-00	MYLAR	0.0022uF	5%	50V
C485	1-130-475-00	MYLAR	0.0022uF	5%	50V
C486	1-124-927-11	ELECT	4.7uF	20%	100V
C561	1-124-473-11	ELECT	1000uF	20%	10V
C581	1-124-925-11	ELECT	2.2uF	20%	100V
C582	1-162-286-31	CERAMIC	220PF	10%	50V
C583	1-136-157-00	FILM	0.022uF	5%	50V
C585	1-162-286-31	CERAMIC	220PF	10%	50V
C586	1-124-925-11	ELECT	2.2uF	20%	100V
C587	1-124-925-11	ELECT	2.2uF	20%	100V
C590	1-126-103-11	ELECT	470uF	20%	16V
C591	1-124-120-11	ELECT	220uF	20%	25V
C701	1-124-443-00	ELECT	100uF	20%	10V
C702	1-124-122-11	ELECT	100uF	20%	50V
C703	1-124-925-11	ELECT	2.2uF	20%	100V
C704	1-124-122-11	ELECT	100uF	20%	50V
C705	1-124-927-11	ELECT	4.7uF	20%	100V
C707	1-124-925-11	ELECT	2.2uF	20%	100V
C708	1-126-946-11	ELECT	6800uF	20%	25V
C709	1-124-126-00	ELECT	47uF	20%	10V
C710	1-126-927-11	ELECT	2200uF	20%	10V
C711	1-126-927-11	ELECT	2200uF	20%	10V
C712	1-124-564-11	ELECT	4700uF	20%	25V
C713	1-161-494-00	CERAMIC	0.022uF		25V
C801	1-124-443-00	ELECT	100uF	20%	10V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-164-159-11	CERAMIC	0.1uF		50V
C804	1-124-443-00	ELECT	100uF	20%	10V
C805	1-124-925-11	ELECT	2.2uF	20%	100V
C806	1-136-165-00	FILM	0.1uF	5%	50V
C807	1-136-165-00	FILM	0.1uF	5%	50V
C808	1-162-288-31	CERAMIC	330PF	10%	50V
C809	1-162-288-31	CERAMIC	330PF	10%	50V
C849	1-162-288-31	CERAMIC	330PF	10%	50V
C850	1-162-288-31	CERAMIC	330PF	10%	50V
C851	1-124-902-00	ELECT	0.47uF	20%	50V
C861	1-162-284-31	CERAMIC	150PF	10%	50V
C901	1-164-159-11	CERAMIC	0.1uF		50V
C902	1-124-443-00	ELECT	100uF	20%	10V
C903	1-164-159-11	CERAMIC	0.1uF		50V

< CONNECTOR >

	CN501	1-568-802-11	SOCKET, CONNECTOR 19P
	CN502	1-568-802-11	SOCKET, CONNECTOR 19P
*	CN503	1-573-978-11	CONNECTOR, BOARD TO BOARD 11P
*	CN504	1-573-978-11	CONNECTOR, BOARD TO BOARD 11P
*	CN505	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P
*	CN701	1-564-339-00	PIN, CONNECTOR 5P
*	CN703	1-564-510-11	PLUG, CONNECTOR 7P
*	CN801	1-568-830-11	SOCKET, CONNECTOR 11P
*	CN802	1-568-839-11	SOCKET, CONNECTOR 23P
*	CN803	1-568-828-11	SOCKET, CONNECTOR 9P
*	CN804	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P
*	CN805	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P
*	CN806	1-568-828-11	SOCKET, CONNECTOR 9P
*	CN807	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P
*	CN808	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P
*	CN809	1-568-830-11	SOCKET, CONNECTOR 11P

< COMPOSITION CIRCUIT BLOCK >

	CP903	1-239-302-11	COMPOSITION CIRCUIT BLOCK

< DIODE >

	D71	8-719-987-63	DIODE 1N4148M
	D72	8-719-987-63	DIODE 1N4148M
	D73	8-719-933-54	DIODE HZS9A2L
	D74	8-719-987-63	DIODE 1N4148M
	D75	8-719-987-63	DIODE 1N4148M
	D76	8-719-933-54	DIODE HZS9A2L
	D191	8-719-987-63	DIODE 1N4148M
	D291	8-719-987-63	DIODE 1N4148M
	D561	8-719-987-63	DIODE 1N4148M
	D601	8-719-987-63	DIODE 1N4148M
	D602	8-719-987-63	DIODE 1N4148M

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
D701	8-719-000-78	DIODE HZS7A1L	
D702	8-719-987-63	DIODE 1N4148M	
D703	8-719-200-77	DIODE 10E2N	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-987-63	DIODE 1N4148M	
D706	8-719-987-63	DIODE 1N4148M	
D708	8-719-312-09	DIODE RBA-402	
D709	8-719-933-33	DIODE HZS6A1L	
D712	8-719-933-33	DIODE HZS6A1L	
D713	8-719-000-78	DIODE HZS7A1L	
D720	8-719-987-63	DIODE 1N4148M	
D801	8-719-987-63	DIODE 1N4148M	
D811	8-719-987-63	DIODE 1N4148M	
D812	8-719-987-63	DIODE 1N4148M	
		< IC >	
IC71	8-759-634-51	IC M5218AP	
IC72	8-752-059-55	IC CXA1331S	
IC73	8-752-059-55	IC CXA1331S	
IC74	8-759-000-49	IC MC14066BCP	
IC75	8-759-000-49	IC MC14066BCP	
IC76	8-759-000-49	IC MC14066BCP	
IC506	8-759-140-53	IC uPD4053BC	
IC507	8-759-634-51	IC M5218AP	
IC508	8-759-945-58	IC RC4558P	
IC509	8-759-945-58	IC RC4558P	
IC701	8-759-945-58	IC RC4558P	
IC802	8-759-635-94	IC M50925-482SP	
IC803	8-759-634-84	IC M50255P	
IC804	8-759-240-50	IC TC4050BP	
IC805	8-759-207-05	IC TA7272P	
IC806	8-759-000-48	IC MC14052BCP	
IC807	8-759-000-48	IC MC14052BCP	
IC862	8-759-000-49	IC MC14066BCP	
IC901	8-759-066-13	IC M50941-714-SP	
		< JACK >	
J501	1-507-796-71	JACK (HEADPHONES)	
		< COIL >	
* L801	1-420-872-00	COIL, AIR CORE	
* L802	1-420-872-00	COIL, AIR CORE	
		< FILTER >	
LPF371	1-231-388-00	FILTER, LOW PASS	
LPF471	1-231-388-00	FILTER, LOW PASS	

Ref. No.	Part No.	Description	Remark
		< JACK >	
PJ561	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)	
		< TRANSISTOR >	
Q71	8-729-900-65	TRANSISTOR DTA144ES	
Q72	8-729-900-65	TRANSISTOR DTA144ES	
Q73	8-729-900-65	TRANSISTOR DTA144ES	
Q74	8-729-900-80	TRANSISTOR DTC114ES	
Q75	8-729-900-65	TRANSISTOR DTA144ES	
Q76	8-729-900-65	TRANSISTOR DTA144ES	
Q77	8-729-900-80	TRANSISTOR DTC114ES	
Q78	8-729-900-65	TRANSISTOR DTA144ES	
Q79	8-729-900-89	TRANSISTOR DTC144ES	
Q80	8-729-900-65	TRANSISTOR DTA144ES	
Q81	8-729-900-89	TRANSISTOR DTC144ES	
Q82	8-729-900-65	TRANSISTOR DTA144ES	
Q83	8-729-900-89	TRANSISTOR DTC144ES	
Q131	8-729-900-74	TRANSISTOR DTC143TS	
Q151	8-729-900-74	TRANSISTOR DTC143TS	
Q161	8-729-922-37	TRANSISTOR 2SD2144S	
Q231	8-729-900-74	TRANSISTOR DTC143TS	
Q251	8-729-900-74	TRANSISTOR DTC143TS	
Q261	8-729-922-37	TRANSISTOR 2SD2144S	
Q371	8-729-900-80	TRANSISTOR DTC114ES	
Q471	8-729-900-80	TRANSISTOR DTC114ES	
Q561	8-729-900-65	TRANSISTOR DTA144ES	
Q562	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q701	8-729-209-15	TRANSISTOR 2SD2012	
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q703	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q704	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q705	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q706	8-729-900-85	TRANSISTOR DTC144WS	
Q707	8-729-209-15	TRANSISTOR 2SD2012	
Q708	8-729-900-89	TRANSISTOR DTC144ES	
Q801	8-729-801-84	TRANSISTOR 2SB1013-4	
Q802	8-729-801-84	TRANSISTOR 2SB1013-4	
Q803	8-729-900-61	TRANSISTOR DTA114ES	
Q804	8-729-900-80	TRANSISTOR DTC114ES	
Q805	8-729-900-61	TRANSISTOR DTA114ES	
Q806	8-729-900-61	TRANSISTOR DTA114ES	
Q807	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q851	8-729-900-61	TRANSISTOR DTA114ES	
Q852	8-729-900-89	TRANSISTOR DTC144ES	
Q861	8-729-900-65	TRANSISTOR DTA144ES	
Q862	8-729-900-89	TRANSISTOR DTC144ES	
Q898	8-729-900-61	TRANSISTOR DTA114ES	
Q899	8-729-900-61	TRANSISTOR DTA114ES	

Ref. No.	Part No.	Description			Remark
Q902	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q903	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q904	8-729-900-74	TRANSISTOR	DTC143TS		
Q905	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q906	8-729-620-05	TRANSISTOR	2SC2603-EF		
		< RESISTOR >			
R71	1-249-425-11	CARBON	4.7K	5%	1/4W
R72	1-215-455-00	METAL	27K	1%	1/6W
R73	1-249-417-11	CARBON	1K	5%	1/4W
R74	1-215-455-00	METAL	27K	1%	1/6W
R75	1-249-417-11	CARBON	1K	5%	1/4W
R76	1-249-433-11	CARBON	22K	5%	1/4W
R77	1-249-429-11	CARBON	10K	5%	1/4W
R78	1-249-433-11	CARBON	22K	5%	1/4W
R79	1-249-433-11	CARBON	22K	5%	1/4W
R80	1-249-429-11	CARBON	10K	5%	1/4W
R81	1-249-433-11	CARBON	22K	5%	1/4W
R82	1-249-435-11	CARBON	33K	5%	1/4W
R83	1-249-435-11	CARBON	33K	5%	1/4W
R84	1-249-435-11	CARBON	33K	5%	1/4W
R136	1-249-420-11	CARBON	1.8K	5%	1/4W
R137	1-249-423-11	CARBON	3.3K	5%	1/4W
R138	1-247-887-00	CARBON	220K	5%	1/4W
R139	1-249-429-11	CARBON	10K	5%	1/4W
R156	1-249-420-11	CARBON	1.8K	5%	1/4W
R157	1-249-423-11	CARBON	3.3K	5%	1/4W
R158	1-247-887-00	CARBON	220K	5%	1/4W
R159	1-249-429-11	CARBON	10K	5%	1/4W
R161	1-249-433-11	CARBON	22K	5%	1/4W
R162	1-249-417-11	CARBON	1K	5%	1/4W
R163	1-249-421-11	CARBON	2.2K	5%	1/4W
R164	1-249-432-11	CARBON	18K	5%	1/4W
R165	1-249-421-11	CARBON	2.2K	5%	1/4W
R171	1-249-429-11	CARBON	10K	5%	1/4W
R174	1-249-409-11	CARBON	220	5%	1/4W
R175	1-249-428-11	CARBON	8.2K	5%	1/4W
R176	1-249-431-11	CARBON	15K	5%	1/4W
R191	1-249-429-11	CARBON	10K	5%	1/4W
R192	1-247-864-11	CARBON	24K	5%	1/4W
R193	1-249-434-11	CARBON	27K	5%	1/4W
R194	1-249-408-11	CARBON	180	5%	1/4W
R236	1-249-420-11	CARBON	1.8K	5%	1/4W
R237	1-249-423-11	CARBON	3.3K	5%	1/4W
R238	1-247-887-00	CARBON	220K	5%	1/4W
R239	1-249-429-11	CARBON	10K	5%	1/4W
R256	1-249-420-11	CARBON	1.8K	5%	1/4W
R257	1-249-423-11	CARBON	3.3K	5%	1/4W
R258	1-247-887-00	CARBON	220K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R259	1-249-429-11	CARBON	10K	5%	1/4W
R261	1-249-433-11	CARBON	22K	5%	1/4W
R262	1-249-417-11	CARBON	1K	5%	1/4W
R263	1-249-421-11	CARBON	2.2K	5%	1/4W
R264	1-249-432-11	CARBON	18K	5%	1/4W
R265	1-249-421-11	CARBON	2.2K	5%	1/4W
R271	1-249-429-11	CARBON	10K	5%	1/4W
R274	1-249-409-11	CARBON	220	5%	1/4W
R275	1-249-428-11	CARBON	8.2K	5%	1/4W
R276	1-249-431-11	CARBON	15K	5%	1/4W
R291	1-249-429-11	CARBON	10K	5%	1/4W
R292	1-247-864-11	CARBON	24K	5%	1/4W
R293	1-249-434-11	CARBON	27K	5%	1/4W
R294	1-249-408-11	CARBON	180	5%	1/4W
R372	1-249-441-11	CARBON	100K	5%	1/4W
R373	1-249-435-11	CARBON	33K	5%	1/4W
R374	1-249-432-11	CARBON	18K	5%	1/4W
R375	1-249-423-11	CARBON	3.3K	5%	1/4W
R376	1-249-441-11	CARBON	100K	5%	1/4W
R377	1-249-429-11	CARBON	10K	5%	1/4W
R379	1-249-441-11	CARBON	100K	5%	1/4W
R381	1-249-414-11	CARBON	560	5%	1/4W
R382	1-247-864-11	CARBON	24K	5%	1/4W
R383	1-249-441-11	CARBON	100K	5%	1/4W
R384	1-249-414-11	CARBON	560	5%	1/4W
R385	1-247-864-11	CARBON	24K	5%	1/4W
R386	1-249-441-11	CARBON	100K	5%	1/4W
R391	1-247-872-11	CARBON	51K	5%	1/4W
R472	1-249-441-11	CARBON	100K	5%	1/4W
R473	1-249-435-11	CARBON	33K	5%	1/4W
R474	1-249-432-11	CARBON	18K	5%	1/4W
R475	1-249-423-11	CARBON	3.3K	5%	1/4W
R476	1-249-441-11	CARBON	100K	5%	1/4W
R477	1-249-429-11	CARBON	10K	5%	1/4W
R479	1-249-441-11	CARBON	100K	5%	1/4W
R481	1-249-414-11	CARBON	560	5%	1/4W
R482	1-247-864-11	CARBON	24K	5%	1/4W
R483	1-249-441-11	CARBON	100K	5%	1/4W
R484	1-249-414-11	CARBON	560	5%	1/4W
R485	1-247-864-11	CARBON	24K	5%	1/4W
R486	1-249-441-11	CARBON	100K	5%	1/4W
R491	1-247-872-11	CARBON	51K	5%	1/4W
R561	1-249-409-11	CARBON	220	5%	1/4W
R562	1-249-433-11	CARBON	22K	5%	1/4W
R581	1-247-887-00	CARBON	220K	5%	1/4W
R582	1-249-425-11	CARBON	4.7K	5%	1/4W
R583	1-249-441-11	CARBON	100K	5%	1/4W
R584	1-249-428-11	CARBON	8.2K	5%	1/4W
R586	1-249-423-11	CARBON	3.3K	5%	1/4W

SYSTEM CONTROL

Ref. No.	Part No.	Description			Remark
R587	1-249-417-11	CARBON	1K	5%	1/4W
R588	1-249-441-11	CARBON	100K	5%	1/4W
R591	1-249-435-11	CARBON	33K	5%	1/4W
R592	1-249-433-11	CARBON	22K	5%	1/4W
R593	1-249-433-11	CARBON	22K	5%	1/4W
R701	1-249-421-11	CARBON	2.2K	5%	1/4W
R702	1-249-421-11	CARBON	2.2K	5%	1/4W
R703	1-249-429-11	CARBON	10K	5%	1/4W
R704	1-249-428-11	CARBON	8.2K	5%	1/4W
R705	1-249-425-11	CARBON	4.7K	5%	1/4W
R706	1-249-429-11	CARBON	10K	5%	1/4W
R707	1-249-409-11	CARBON	220	5%	1/4W
R708	1-249-420-11	CARBON	1.8K	5%	1/4W
R709	1-249-426-11	CARBON	5.6K	5%	1/4W
R710	1-249-422-11	CARBON	2.7K	5%	1/4W
R711	1-249-430-11	CARBON	12K	5%	1/4W
R712	1-249-429-11	CARBON	10K	5%	1/4W
R713	1-249-409-11	CARBON	220	5%	1/4W
R714	1-249-429-11	CARBON	10K	5%	1/4W
R715	1-249-429-11	CARBON	10K	5%	1/4W
R716	1-249-429-11	CARBON	10K	5%	1/4W
⚠R717	1-219-136-11	FUSIBLE	0.22	10%	1/4W
R721	1-249-437-11	CARBON	47K	5%	1/4W
R788	1-249-417-11	CARBON	1K	5%	1/4W
R789	1-249-417-11	CARBON	1K	5%	1/4W
R790	1-249-421-11	CARBON	2.2K	5%	1/4W
R791	1-249-421-11	CARBON	2.2K	5%	1/4W
R792	1-249-421-11	CARBON	2.2K	5%	1/4W
R793	1-249-421-11	CARBON	2.2K	5%	1/4W
R794	1-249-429-11	CARBON	10K	5%	1/4W
R795	1-247-887-00	CARBON	220K	5%	1/4W
R796	1-249-429-11	CARBON	10K	5%	1/4W
R797	1-249-429-11	CARBON	10K	5%	1/4W
R798	1-249-429-11	CARBON	10K	5%	1/4W
R799	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-249-434-11	CARBON	27K	5%	1/4W
R802	1-249-421-11	CARBON	2.2K	5%	1/4W
R804	1-249-434-11	CARBON	27K	5%	1/4W
R805	1-247-895-00	CARBON	470K	5%	1/4W
R808	1-247-895-00	CARBON	470K	5%	1/4W
R809	1-249-425-11	CARBON	4.7K	5%	1/4W
R810	1-247-862-11	CARBON	20K	5%	1/4W
R811	1-249-425-11	CARBON	4.7K	5%	1/4W
R812	1-247-862-11	CARBON	20K	5%	1/4W
R813	1-249-437-11	CARBON	47K	5%	1/4W
R814	1-247-866-11	CARBON	30K	5%	1/4W
R815	1-249-434-11	CARBON	27K	5%	1/4W
R816	1-247-872-11	CARBON	51K	5%	1/4W
R818	1-247-872-11	CARBON	51K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R819	1-249-405-11	CARBON	100	5%	1/4W
R820	1-249-437-11	CARBON	47K	5%	1/4W
R821	1-247-866-11	CARBON	30K	5%	1/4W
R822	1-249-434-11	CARBON	27K	5%	1/4W
R823	1-247-872-11	CARBON	51K	5%	1/4W
R825	1-249-405-11	CARBON	100	5%	1/4W
R826	1-247-872-11	CARBON	51K	5%	1/4W
R827	1-249-441-11	CARBON	100K	5%	1/4W
R828	1-249-429-11	CARBON	10K	5%	1/4W
R832	1-249-417-11	CARBON	1K	5%	1/4W
R833	1-249-438-11	CARBON	56K	5%	1/4W
R858	1-249-431-11	CARBON	15K	5%	1/4W
R859	1-249-435-11	CARBON	33K	5%	1/4W
R860	1-249-428-11	CARBON	8.2K	5%	1/4W
R862	1-249-431-11	CARBON	15K	5%	1/4W
R863	1-249-435-11	CARBON	33K	5%	1/4W
R864	1-249-428-11	CARBON	8.2K	5%	1/4W
R868	1-249-429-11	CARBON	10K	5%	1/4W
R869	1-249-429-11	CARBON	10K	5%	1/4W
R870	1-249-429-11	CARBON	10K	5%	1/4W
R874	1-247-903-00	CARBON	1M	5%	1/4W
R891	1-249-429-11	CARBON	10K	5%	1/4W
R892	1-249-429-11	CARBON	10K	5%	1/4W
R893	1-249-415-11	CARBON	680	5%	1/4W
R894	1-249-415-11	CARBON	680	5%	1/4W
R901	1-247-903-00	CARBON	1M	5%	1/4W
R904	1-249-430-11	CARBON	12K	5%	1/4W
R909	1-249-433-11	CARBON	22K	5%	1/4W
R910	1-249-424-11	CARBON	3.9K	5%	1/4W
R911	1-249-437-11	CARBON	47K	5%	1/4W
R912	1-249-437-11	CARBON	47K	5%	1/4W
R951	1-249-441-11	CARBON	100K	5%	1/4W
R952	1-249-441-11	CARBON	100K	5%	1/4W

< SWITCH >

S701	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)

< TEST PIN >

* TP1	1-564-505-11	PLUG, CONNECTOR 2P
* TP2	1-564-506-11	PLUG, CONNECTOR 3P

< VIBRATOR >

X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)
X901	1-577-358-21	VIBRATOR, CERAMIC (4MHz)

****

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠13	1-558-945-11	CORD, POWER (POLAR. SPT-1) (US)	
⚠14	1-555-795-00	CORD, POWER, EULO PLUG (AEP, G)	
⚠15	1-551-188-XX	CORD, POWER (E)	
⚠16	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠17	1-590-836-31	CORD, POWER (Canadian)	
61	1-690-915-11	WIRE, SHIELD (FLAT TYPE) (11 CORE)	
62	1-690-911-11	WIRE (FLAT TYPE) (11 CORE)	
63	1-690-910-11	WIRE (FLAT TYPE) (23 CORE)	
72	1-575-781-11	WIRE, FLAT TYPE (9 CORE)	
75	1-690-422-11	WIRE, FLAT TYPE (19 CORE)	
80	1-690-906-21	WIRE (FLAT TYPE) (9 CORE)	
120	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
HRPE101A	2003-838-A	BASE ASSY, HEAD (REC/PB/ERASE)	
M1	X-3359-417-1	MOTOR ASSY (CAPSTAN)	
M2	X-3363-501-1	MOTOR (REEL MOTOR) ASSY	
⚠T701	1-450-863-11	TRANSFORMER, POWER (E)	
⚠T701	1-450-869-11	TRANSFORMER, POWER (US, Canadian)	
⚠T701	1-450-870-11	TRANSFORMER, POWER (AEP, UK, G)	
⚠VS701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		******************************	
	1-465-738-11	REMOTE COMMANDER (US, Canadian)	
	1-558-271-11	CORD, CONNECTION	
	2-181-754-01	COVER, BATTERY (US, Canadian)	
*	3-366-701-81	INDIVIDUAL CARTON (WR790)	
*	3-366-701-91	INDIVIDUAL CARTON (WR690)	
*	3-376-446-01	CUSHION	
	3-754-780-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (Canadian, AEP, E)	
	3-754-780-21	MANUAL, INSTRUCTION (ENGLISH) (US, UK)	
	3-754-780-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH) (AEP)	
	3-754-780-51	MANUAL, INSTRUCTION (GERMAN) (G)	
	3-754-780-61	MANUAL, INSTRUCTION (CHINESE) (E)	
	3-755-288-11	MANUAL, INSTRUCTION (RM) (US, Canadian)	
	9-910-999-33	INSTRUCTION (WR690:US)	
**********			

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-682-547-09	SCREW +BVTT 3X6 (S)	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#5	7-685-134-19	SCREW (+ PTPWH) (2.6X8)	
#6	7-621-773-95	SCREW +BVTT 2.6X6 (S)	
#7	7-621-775-00	SCREW +B 2.6X3	
#8	7-627-556-08	SCREW +P 2.6X2.8	
#9	7-621-849-00	SCREW (BV/RING)	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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TC-WR690/WR790

SONY®
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
TC-WR690/WR790

E Model
TC-WR690

SUPPLEMENT-1

File this supplement with the Service Manual.

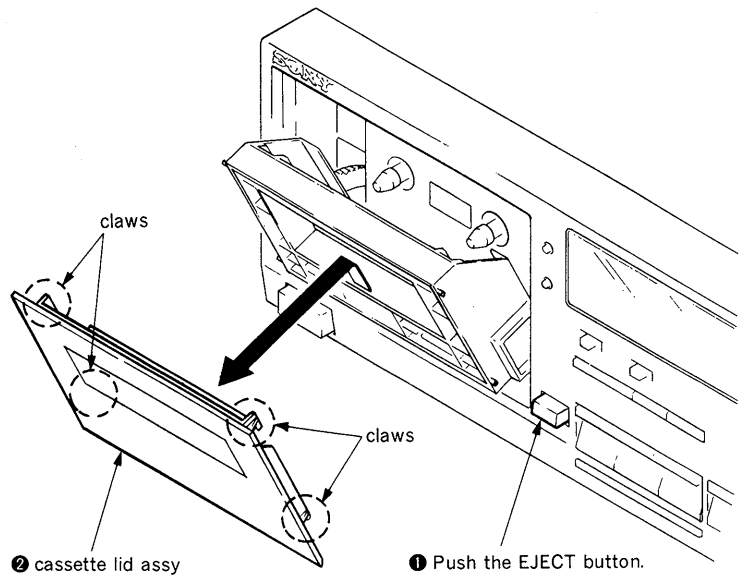
- This supplement updates the TC-WR690 service manual to including production changes.

- The next page as fallow change from those in TC-WR690 service manual.

DISASSEMBLY

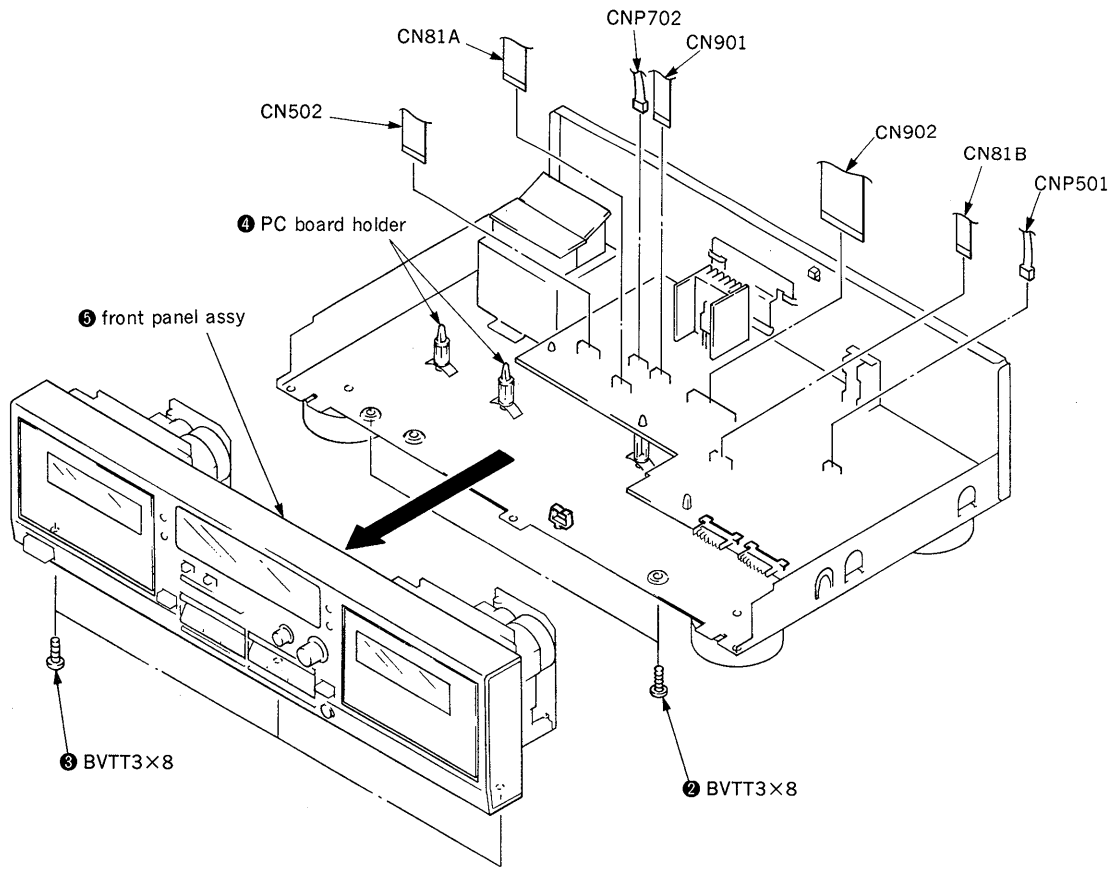
Note : Follow the disassembly procedure in the numerical order given.

2-1. CASSETTE LID ASSY



2-2. FRONT PANEL ASSY

❶ Remove the connectors.



ELECTRICAL ADJUSTMENT

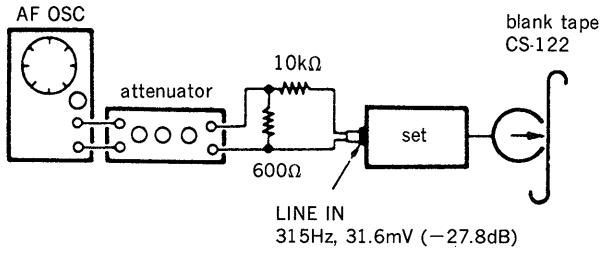
Record Level Adjustment DECK A DECK B

Setting :

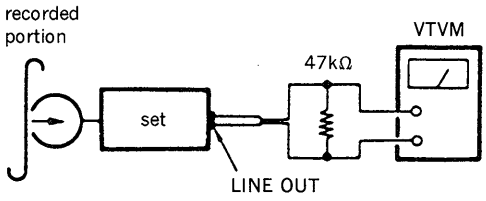
REC LEVEL control : standard record position (Refer to page 8.)

Procedure :

1. Record Mode



2. Playback Mode



(deck A)

3. Playback the signal recorded in step 1, and confirm that the playback output level is VTVM reading becomes within adjustment limits below.
4. If the adjustment limits are not satisfied, adjust each RV102 (L-CH) and RV202 (R-CH) so that the VTVM reading becomes within adjustment limits below.

(deck B)

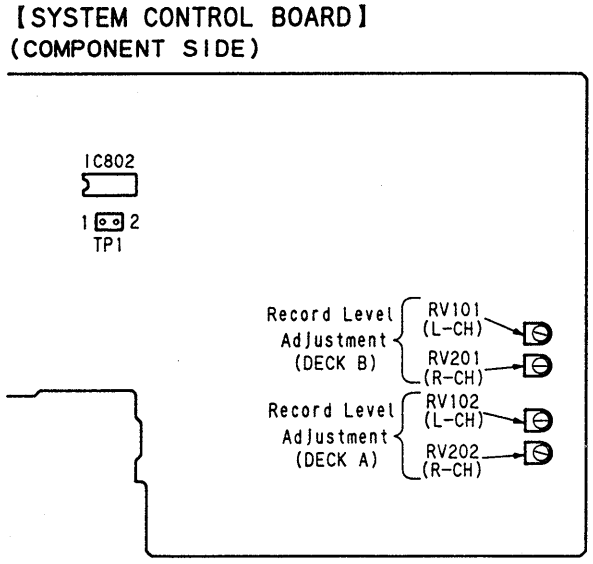
5. Similarly, playback the signal recorded in step 1, and confirm that the playback output level is VTVM reading becomes within adjustment limits below.
6. If the adjustment limits are not satisfied, adjust each RV101 (L-CH) and RV201 (R-CH) so that the VTVM reading becomes within adjustment limits below.

Adjustment Limits :

315Hz playback output level : −27.7±0.5dB (30.2 to 33.8mV)

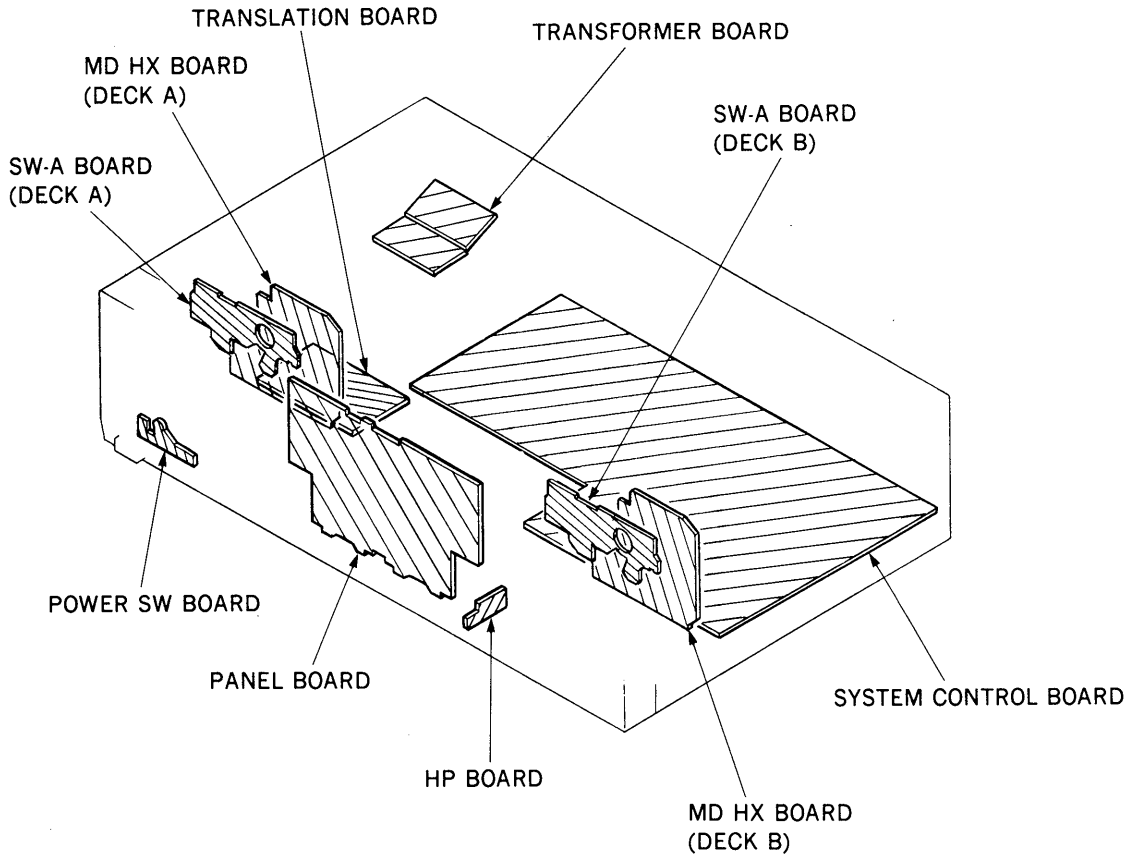
Adjustment Location : System control board

Adjustment Location :



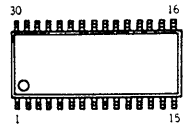
DIAGRAMS

5-1. CIRCUIT BOADS LOCATION



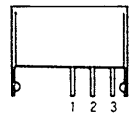
5-2. SEMICONDUCTOR LEAD LAYOUTS

CXA1331M



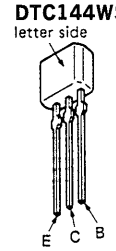
TOP VIEW

SBX1610-59

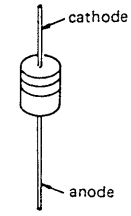


1 Vout
2 Vcc
3 GND

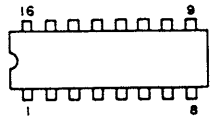
DTC144ES
DTC144WS



HZS6A1L
UZL-7H1
UZL-7L2

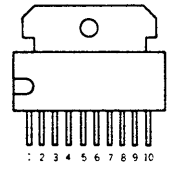


CXA1578P
MC14052BCP



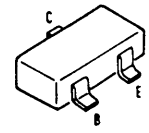
(TOP VIEW)

TA7272P

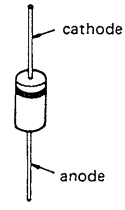


MARKING SIDE VIEW

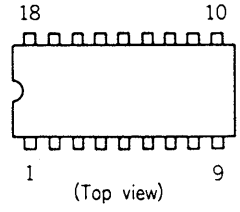
2SA1162



IN4148M
10E2N

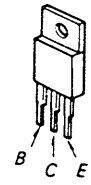


μPC1297CA

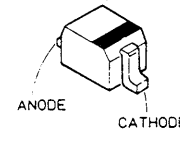


(Top view)

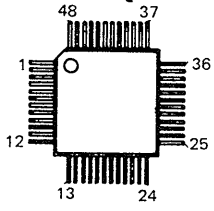
2SB1094-LK
2SD1406-YGR
2SD2012



1SS352

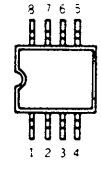


CXA1599Q



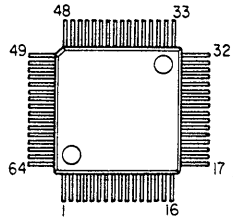
(TOP VIEW)

μPC4570G2

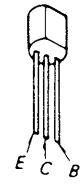


(TOP VIEW)

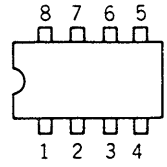
LC866012A-5193



2SB1116A-L
2SD1387-3

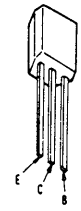


M5218AP
μPC4558C

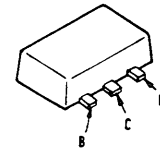


(Top view)

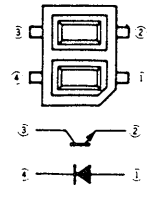
DTA114ES
DTA144ES
DTC114ES
DTC143TS
2SA1317-STU
2SC2603-EF



2SD1622-S

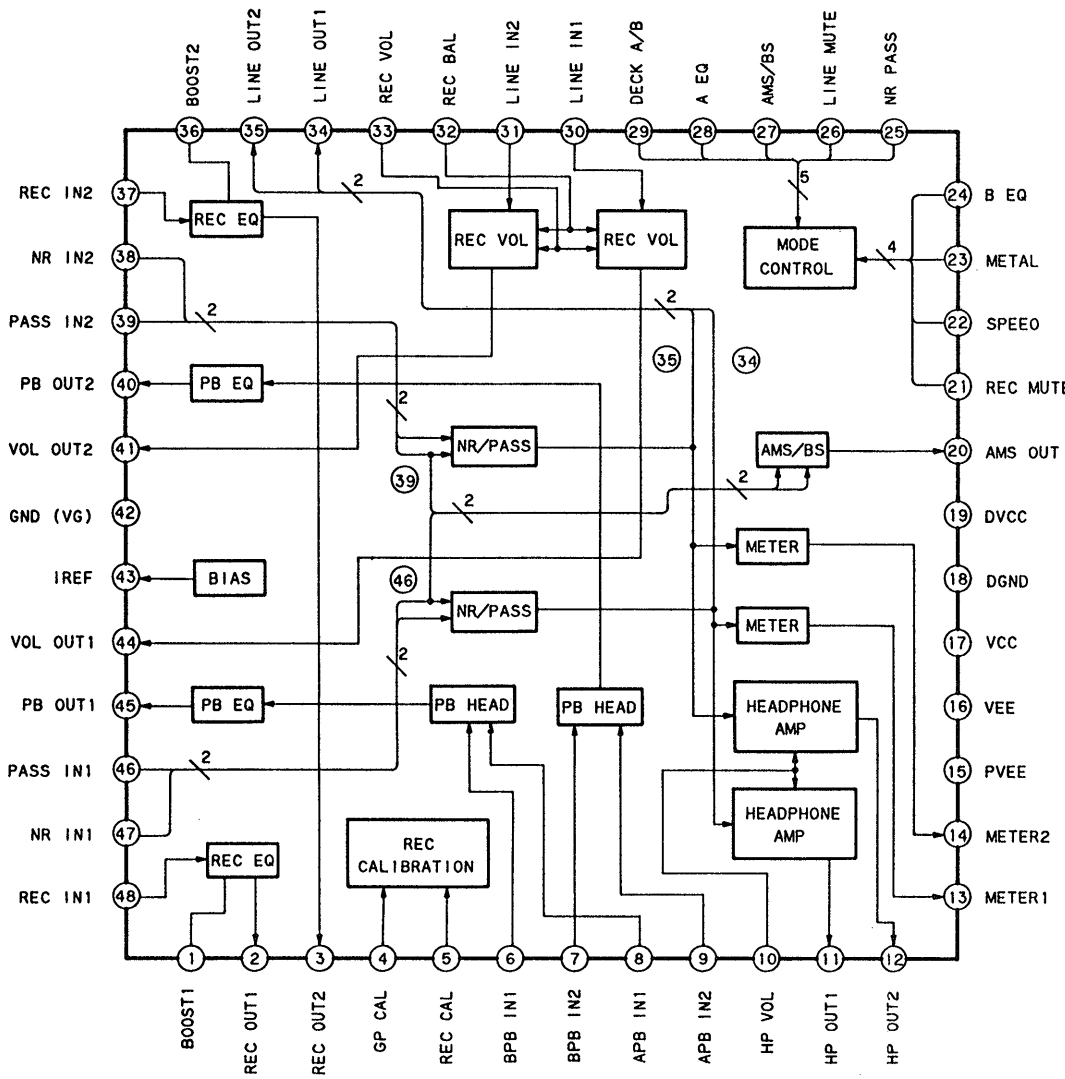


NJL5165K-B

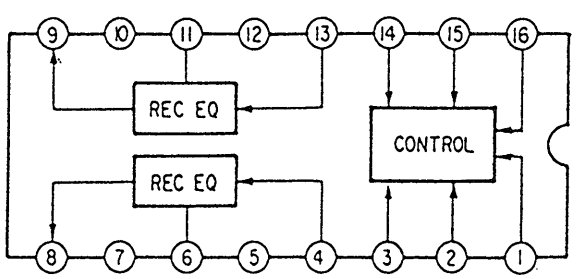


• **IC Block Diagrams**

IC502 CXA1599Q



IC503 CXA1578P



● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D31	C-2	Q101	F-18
D101	B-22	Q102	B-17
D201	B-22	Q103	C-18
D501	F-19	Q201	E-19
D502	B-18	Q202	B-17
D701	B-28	Q203	C-19
D702	B-28	Q501	F-20
D703	B-27	Q502	H-17
D704	B-27	Q503	E-19
D705	B-28	Q504	B-19
D706	B-28	Q505	B-17
D707	D-27	Q506	E-20
D708	D-29	Q507	D-19
D709	A-27	Q701	A-27
D710	A-24	Q702	A-26
D711	C-26	Q703	A-27
D712	C-27	Q704	A-25
D713	C-27	Q705	A-25
D714	D-28	Q706	C-26
D715	B-26	Q707	C-28
D716	B-16	Q708	D-27
D801	F-26	Q801	E-20
D802	H-18	Q802	E-20
D803	E-29	Q803	E-21
D804	H-19	Q804	G-18
		Q805	E-27
IC31	D-3	Q806	G-18
IC81	B-4	Q807	E-28
(IC81)	G-4	Q808	E-28
IC501	E-17	Q809	E-28
IC502	C-17	Q810	E-28
IC503	G-17	Q811	F-27
IC504	H-26	Q812	E-27
IC701	B-25	Q813	E-27
IC801	D-22	Q814	E-27
IC802	C-23	Q815	G-20
IC803	G-20	Q816	G-19
IC901	D-14	Q817	H-19
		Q818	G-19
Q51	B-3	Q819	H-21
Q52	B-3	Q820	G-20
Q53	B-3	Q821	H-21
Q71	C-5	Q822	H-20

( ): SW-A Board

Note:
- ◆ o——: parts extracted from the component side.
- ◆ ●: Through hole.
- ◆ ▒▒▒: Pattern on the side which is seen.
- ◆ ▒▒▒: Pattern of the rear side.

5-3. PRINTED WIRING BOARDS ● Refer to Page 5 for Semiconductor Lead Layouts.

※ MECHANISM DECK BLOCK IS FOR COMMON DECK A AND B, ONE SIDE OMITTED.

【MD HX BOARD】

【SW-A BOARD】

【PANEL BOARD】

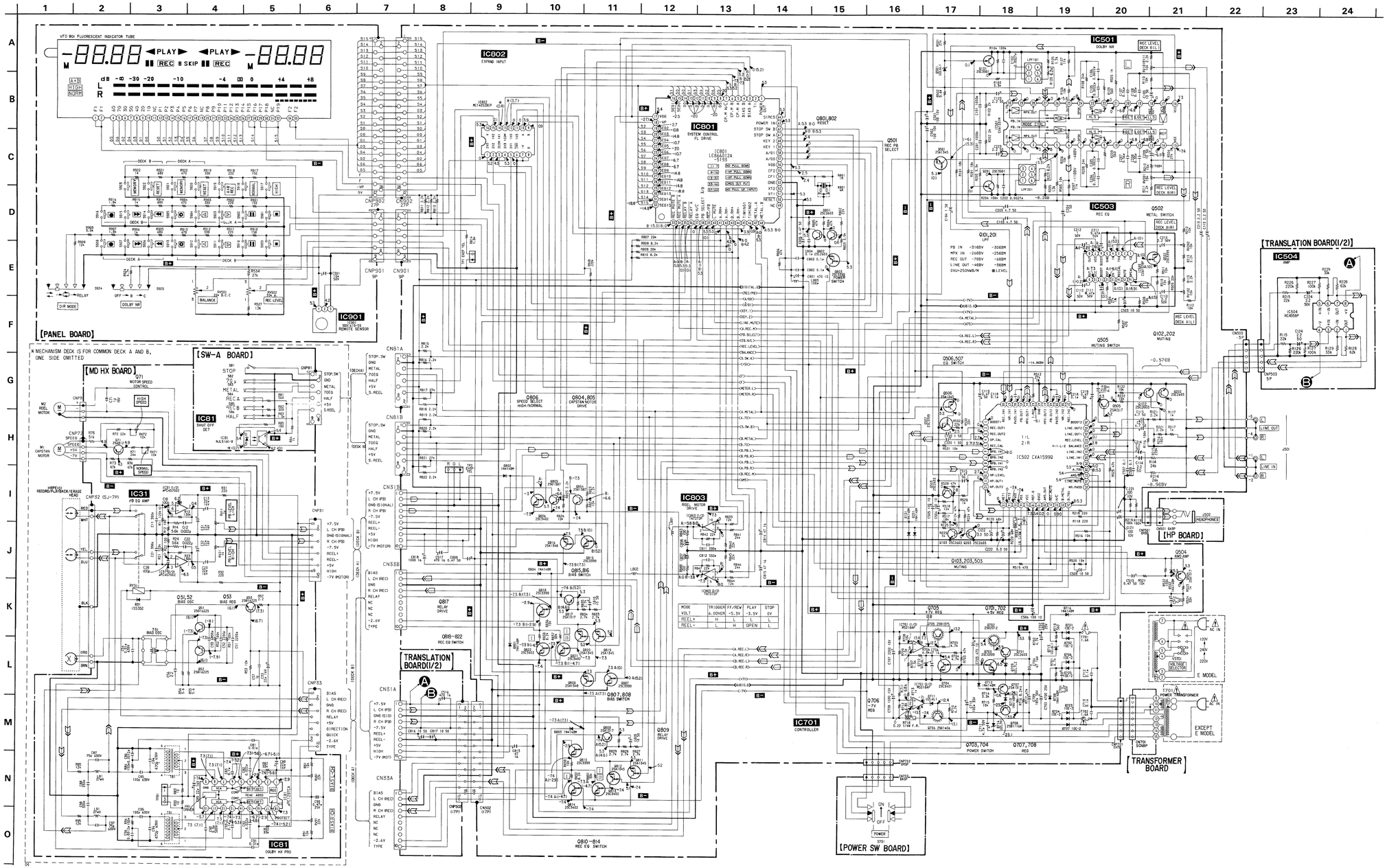
【SYSTEM CONTROL BOARD】

【HP BOARD】

【POWER SW BOARD】

【TRANSLATION BOARD】

【TRANSFORMER BOARD】


[PANEL BOARD]
[SW-A BOARD]
[MD HX BOARD]
[HP BOARD]
[TRANSLATION BOARD(I/2)]
[TRANSFORMER BOARD]
[POWER SW BOARD]
IC501
IC502
IC503
IC504
IC701
IC801
IC803
IC81
IC31
IC901
Q501
Q502
Q505
Q506,507
Q701,702
Q703,704
Q707,708
Q706
Q709
Q710
Q711
Q712
Q713
Q714
Q715
Q716
Q717
Q718
Q719
Q720
Q721
Q722
Q723
Q724
Q725
Q726
Q727
Q728
Q729
Q730
Q731
Q732
Q733
Q734
Q735
Q736
Q737
Q738
Q739
Q740
Q741
Q742
Q743
Q744
Q745
Q746
Q747
Q748

EXPLODED VIEWS

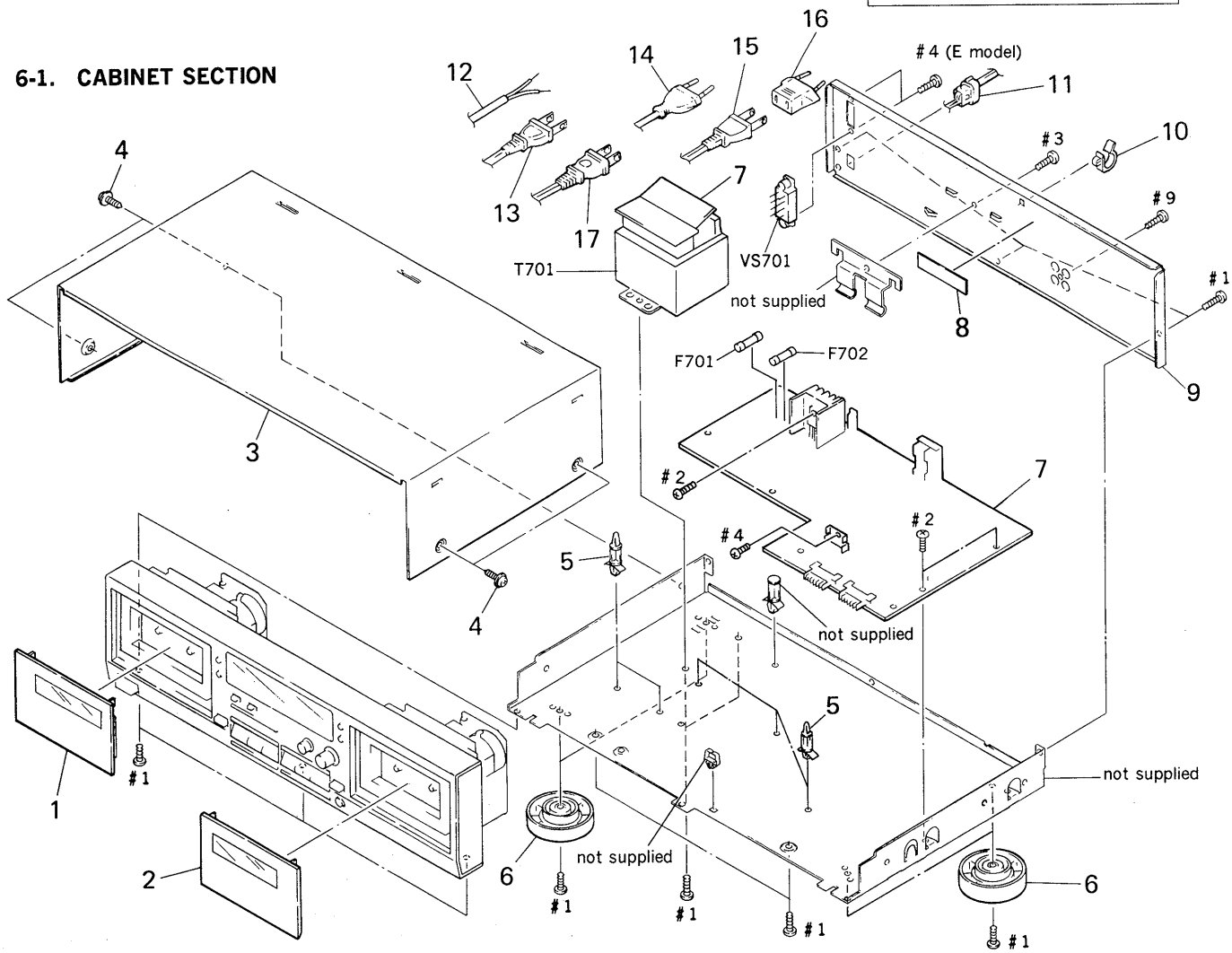
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.
- G: Germany model

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

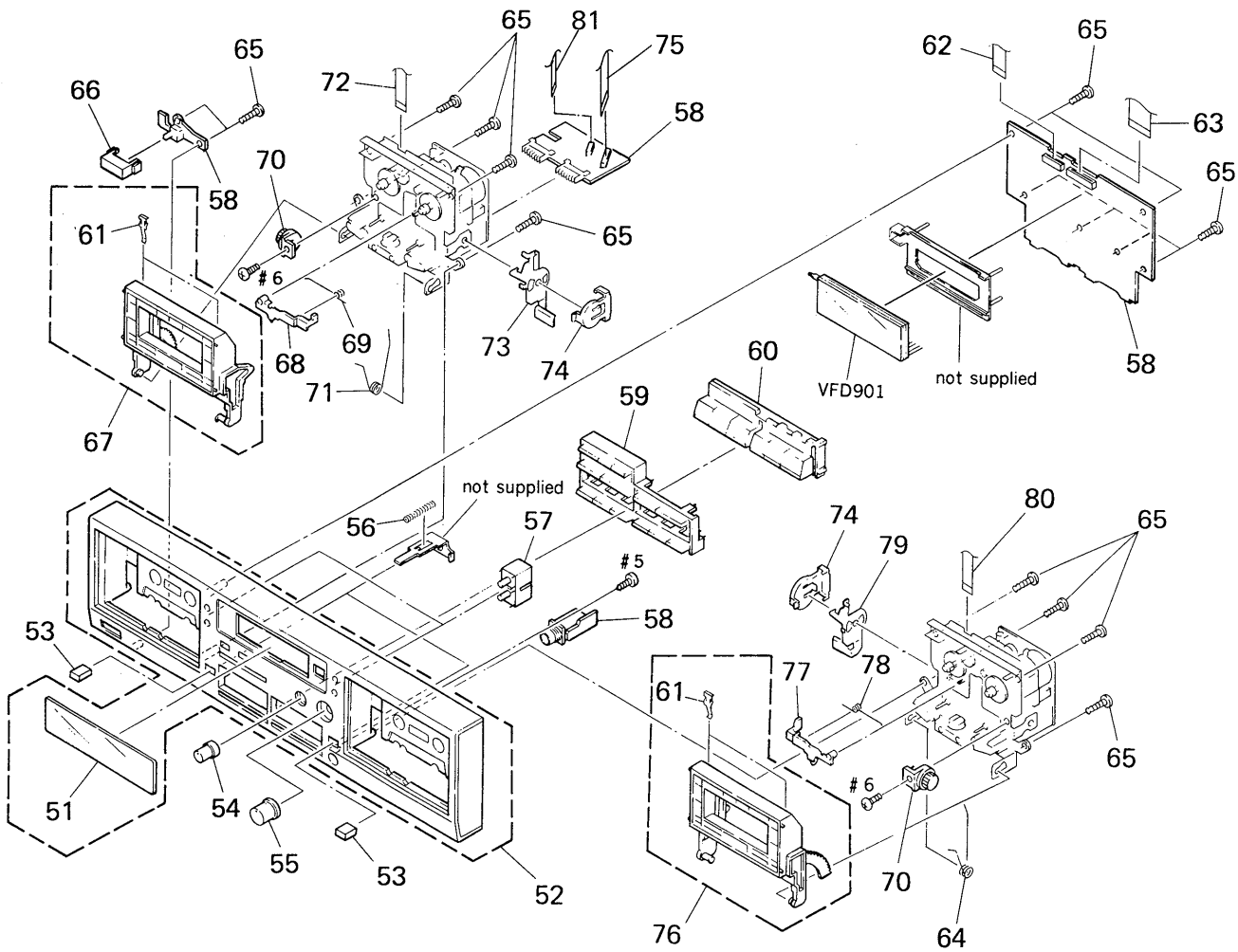
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-3364-740-1	LID (A) ASSY, CASSETTE	
2	X-3364-741-1	LID (B) ASSY, CASSETTE	
3	3-332-578-61	CASE	
4	3-704-366-01	SCREW (CASE) (M3X8)	
* 5	3-346-265-11	HOLDER, PC BOARD	
6	4-943-148-32	FOOT (F58175SW)	
* 7	A-2006-738-A	SYSTEM CONTROL BOARD, COMPLETE	
* 8	3-703-044-26	LABEL, CAUTION (US, Canadian)	
* 9	3-377-351-01	PANEL, BACK (US, Canadian)	
* 9	3-377-351-11	PANEL, BACK (Germany)	
* 9	3-377-351-21	PANEL, BACK (AEP)	
* 9	3-377-351-31	PANEL, BACK (UK)	
* 9	3-377-351-41	PANEL, BACK (E)	
* 10	4-949-235-01	HOOK	
*⚠11	3-703-244-00	BUSHING (2104), CORD (Canadian, AEP, Germany, UK)	
*⚠11	3-703-571-11	BUSHING (S) (4516), CORD (US, E)	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠13	1-558-945-11	CORD, POWER (POLAR. SPT-1) (US)	
⚠14	1-555-795-00	CORD, POWER, EULO PLUG (AEP, Germany)	
⚠15	1-551-188-XX	CORD, POWER (E)	
⚠16	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠17	1-590-836-31	CORD, POWER (Canadian)	
⚠F701	1-532-259-00	FUSE, TIME-LAG 1.6A (AEP, Germany, UK, E)	
⚠F701	1-532-742-11	FUSE, GLASS TUBE 1.6A (US, Canadian)	
⚠F702	1-532-259-00	FUSE, TIME-LAG 1.6A (AEP, Germany, UK, E)	
⚠F702	1-532-742-11	FUSE, GLASS TUBE 1.6A (US, Canadian)	
⚠T701	1-450-863-11	TRANSFORMER, POWER (E)	
⚠T701	1-450-869-11	TRANSFORMER, POWER (US, Canadian)	
⚠T701	1-450-870-11	TRANSFORMER, POWER (AEP, Germany, UK)	
⚠VS701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	

6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-377-335-01	WINDOW (M) (AEP, Germany, UK, E)	
51	3-377-335-11	WINDOW (M) (US, Canadian)	
52	X-3364-750-1	PANEL ASSY, FRONT (US, Canadian)	
52	X-3364-751-1	PANEL ASSY, FRONT (AEP, Germany, UK, E)	
53	3-377-328-01	BUTTON (EJECT)	
54	3-367-431-01	KNOB (BAL)	
55	3-377-334-01	KNOB (REC)	
56	3-382-382-01	SPRING, COMPRESSION	
57	3-377-329-11	BUTTON (COUNTER)	
* 58	A-2006-738-A	SYSTEM CONTROL BOARD, COMPLETE	
59	3-377-342-01	BUTTON (WR)	
60	3-377-339-01	BUTTON (FR)	
61	3-308-823-11	SPRING	
62	1-575-905-31	WIRE, FLAT TYPE (9 CORE)	
63	1-690-908-11	WIRE (FLAT TYPE) (27 CORE)	
64	3-354-959-01	SPRING (LOADING L), TORSION	
65	4-951-620-01	SCREW (2.6X8), +BVTP	

Ref. No.	Part No.	Description	Remark
66	3-354-932-01	BUTTON (POWER)	
67	X-3340-195-1	HOLDER (R) ASSY, CASSETTE	
68	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
69	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
70	3-354-963-01	DAMPER	
71	3-354-960-01	SPRING (LOADING R), TORSION	
72	1-575-781-11	WIRE, FLAT TYPE (9 CORE)	
* 73	3-354-954-01	LEVER (LOCK LEVER R)	
74	3-354-957-01	JOINT (LOCK LEVER)	
75	1-574-724-11	WIRE, FLAT TYPE (17 CORE)	
76	X-3340-194-1	HOLDER (L) ASSY, CASSETTE	
77	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
78	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
* 79	3-354-953-01	LEVER (LOCK LEVER L)	
80	1-690-909-11	WIRE (FLAT TYPE) (9 CORE)	
81	1-696-981-11	WIRE (FLAT TYPE) (5 CORE)	
VFD901	1-519-712-11	INDICATOR TUBE, FLUORESCENT	

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
*	A-2006-828-A	MD HX BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C52	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C53	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C54	1-136-601-11	FILM	0.01uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C71	1-164-346-11	CERAMIC CHIP	1uF		16V
C80	1-124-234-00	ELECT	22uF	20%	16V
C81	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C82	1-136-157-00	FILM	0.022uF	5%	50V
C83	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C84	1-136-478-11	FILM	470PF	5%	630V
C85	1-136-433-11	FILM	100PF	5%	630V
C86	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C87	1-136-273-91	FILM	75PF	5%	630V
C88	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C89	1-124-234-00	ELECT	22uF	20%	16V
C90	1-107-045-00	MICA	3.9PF		500V
C91	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C92	1-136-157-00	FILM	0.022uF	5%	50V
C93	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C94	1-136-478-11	FILM	470PF	5%	630V
C95	1-136-433-11	FILM	100PF	5%	630V
C96	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C97	1-136-273-91	FILM	75PF	5%	630V
C98	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C99	1-164-005-11	CERAMIC CHIP	0.47uF		25V
		< CONNECTOR >			
* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P			
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P			
* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P			
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
* CNP72	1-580-411-11	SOCKET, CONNECTOR 4P			
		< DIODE >			
D31	8-719-016-74	DIODE 1SS352			
		< IC >			
IC31	8-759-106-02	IC uPC4570G2			
IC81	8-759-106-56	IC uPC1297CA			
		< COIL >			
L81	1-410-780-11	INDUCTOR	27mH		
L91	1-410-780-11	INDUCTOR	27mH		
		< TRANSISTOR >			
Q51	8-729-808-01	TRANSISTOR	2SD1622-S		
Q52	8-729-808-01	TRANSISTOR	2SD1622-S		
Q53	8-729-808-01	TRANSISTOR	2SD1622-S		
Q71	8-729-216-22	TRANSISTOR	2SA1162		
		< RESISTOR >			
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W

MD HX | SW-A | SYSTEM CONTROL

Ref. No.	Part No.	Description			Remark
R51	1-216-097-00	METAL CHIP	100K	5%	1/10W
R52	1-216-097-00	METAL CHIP	100K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R57	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W
R76	1-216-090-00	METAL CHIP	51K	5%	1/10W
R81	1-216-073-00	METAL CHIP	10K	5%	1/10W
R82	1-216-085-00	METAL CHIP	33K	5%	1/10W
R83	1-216-001-00	METAL CHIP	10	5%	1/10W
R84	1-216-101-00	METAL CHIP	150K	5%	1/10W
R85	1-216-075-00	METAL CHIP	12K	5%	1/10W
R91	1-216-073-00	METAL CHIP	10K	5%	1/10W
R92	1-216-085-00	METAL CHIP	33K	5%	1/10W
R93	1-216-001-00	METAL CHIP	10	5%	1/10W
R94	1-216-101-00	METAL CHIP	150K	5%	1/10W
R95	1-216-075-00	METAL CHIP	12K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-241-627-11	RES, ADJ, CARBON 1K			
RV21	1-241-627-11	RES, ADJ, CARBON 1K			
RV71	1-241-630-11	RES, ADJ, CARBON 10K			
RV72	1-241-630-11	RES, ADJ, CARBON 10K			
RV81	1-241-122-11	RES, ADJ, CARBON 22K			
RV91	1-241-122-11	RES, ADJ, CARBON 22K			
		< RELAY >			
RY31	1-515-803-11	RELAY			
		< TRANSFORMER >			
T51	1-406-417-11	COIL, BIAS OSCILLATION			
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
		< TEST PIN >			
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			

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Ref. No.	Part No.	Description			Remark
*	1-634-841-14	SW-A BOARD			
		**********			
	3-343-419-01	HOLDER (S SENSER A)			
		< CONNECTOR >			
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P			
		< IC >			
IC81	8-719-710-03	DIODE NJL5165K-B			
		< RESISTOR >			
R81	1-249-414-11	CARBON	560	5%	1/4W F
R82	1-247-818-11	CARBON	300	5%	1/4W
R83	1-247-834-11	CARBON	1.3K	5%	1/4W
R84	1-249-417-11	CARBON	1K	5%	1/4W F
R85	1-249-408-11	CARBON	180	5%	1/4W F
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)			
S82	1-571-281-21	SWITCH, LEAF (70EQ)			
S83	1-571-281-21	SWITCH, LEAF (METAL)			
S84	1-571-281-21	SWITCH, LEAF (REC A)			
S85	1-571-281-21	SWITCH, LEAF (REC B)			
S86	1-571-281-21	SWITCH, LEAF (HALF)			

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*	A-2006-738-A	SYSTEM CONTROL BOARD, COMPLETE			
		**********			
*	1-533-213-31	HOLDER, FUSE			
*	1-562-327-00	SOCKET, CONNECTOR 3P			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 SLIT			
	7-682-547-04	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C101	1-162-294-31	CERAMIC	0.001uF	10%	50V
C102	1-130-476-00	MYLAR	0.0027uF	5%	50V
C103	1-124-927-11	ELECT	4.7uF	20%	100V
C104	1-124-903-11	ELECT	1uF	20%	50V
C105	1-130-475-00	MYLAR	0.0022uF	5%	50V
C106	1-130-475-00	MYLAR	0.0022uF	5%	50V
C107	1-136-174-00	FILM	0.56uF	5%	50V
C108	1-136-171-00	FILM	0.33uF	5%	50V
C109	1-124-907-11	ELECT	10uF	20%	50V
C110	1-124-925-11	ELECT	2.2uF	20%	100V
C111	1-124-902-00	ELECT	0.47uF	20%	50V
C112	1-124-903-11	ELECT	1uF	20%	50V
C113	1-124-925-11	ELECT	2.2uF	20%	100V
C114	1-124-925-11	ELECT	2.2uF	20%	100V

SYSTEM CONTROL

Ref. No.	Part No.	Description			Remark
C115	1-124-927-11	ELECT	4.7uF	20%	100V
C118	1-164-159-11	CERAMIC	0.1uF		50V
C119	1-124-902-00	ELECT	0.47uF	20%	50V
C120	1-124-903-11	ELECT	1uF	20%	50V
C121	1-124-443-00	ELECT	100uF	20%	10V
C122	1-123-382-00	ELECT	3.3uF	20%	100V
C123	1-124-925-11	ELECT	2.2uF	20%	100V
C124	1-124-925-11	ELECT	2.2uF	20%	100V
C201	1-162-294-31	CERAMIC	0.001uF	10%	50V
C202	1-130-476-00	MYLAR	0.0027uF	5%	50V
C203	1-124-927-11	ELECT	4.7uF	20%	100V
C204	1-124-903-11	ELECT	1uF	20%	50V
C205	1-130-475-00	MYLAR	0.0022uF	5%	50V
C206	1-130-475-00	MYLAR	0.0022uF	5%	50V
C207	1-136-174-00	FILM	0.56uF	5%	50V
C208	1-136-171-00	FILM	0.33uF	5%	50V
C209	1-124-907-11	ELECT	10uF	20%	50V
C210	1-124-925-11	ELECT	2.2uF	20%	100V
C211	1-124-902-00	ELECT	0.47uF	20%	50V
C212	1-124-903-11	ELECT	1uF	20%	50V
C213	1-124-925-11	ELECT	2.2uF	20%	100V
C214	1-124-925-11	ELECT	2.2uF	20%	100V
C215	1-124-927-11	ELECT	4.7uF	20%	100V
C218	1-164-159-11	CERAMIC	0.1uF		50V
C219	1-124-902-00	ELECT	0.47uF	20%	50V
C220	1-124-903-11	ELECT	1uF	20%	50V
C221	1-124-443-00	ELECT	100uF	20%	10V
C222	1-123-382-00	ELECT	3.3uF	20%	100V
C223	1-124-925-11	ELECT	2.2uF	20%	100V
C224	1-124-925-11	ELECT	2.2uF	20%	100V
C501	1-124-443-00	ELECT	100uF	20%	10V
C502	1-124-443-00	ELECT	100uF	20%	10V
C503	1-124-907-11	ELECT	10uF	20%	50V
C504	1-124-443-00	ELECT	100uF	20%	10V
C505	1-124-443-00	ELECT	100uF	20%	10V
C506	1-124-443-00	ELECT	100uF	20%	10V
C507	1-164-159-11	CERAMIC	0.1uF		50V
C508	1-164-159-11	CERAMIC	0.1uF		50V
C509	1-124-907-11	ELECT	10uF	20%	50V
C510	1-124-902-00	ELECT	0.47uF	20%	50V
C512	1-124-925-11	ELECT	2.2uF	20%	100V
C514	1-126-916-11	ELECT	1000uF	20%	6.3V
C515	1-124-902-00	ELECT	0.47uF	20%	50V
C516	1-126-935-11	ELECT	470uF	20%	16V
C517	1-126-935-11	ELECT	470uF	20%	16V
C701	1-124-925-11	ELECT	2.2uF	20%	100V
C702	1-126-946-11	ELECT	6800uF	20%	25V
C703	1-124-564-11	ELECT	4700uF	20%	25V
C704	1-124-477-11	ELECT	47uF	20%	25V
C705	1-126-925-11	ELECT	470uF	20%	10V
C706	1-124-477-11	ELECT	47uF	20%	25V
C707	1-126-927-11	ELECT	2200uF	20%	10V
C708	1-126-926-11	ELECT	1000uF	20%	10V
C709	1-124-122-11	ELECT	100uF	20%	50V
C710	1-126-948-11	ELECT	100uF	20%	35V
C711	1-124-927-11	ELECT	4.7uF	20%	100V
C712	1-164-159-11	CERAMIC	0.1uF		50V
C713	1-164-159-11	CERAMIC	0.1uF		50V
C801	1-126-925-11	ELECT	470uF	20%	10V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-164-159-11	CERAMIC	0.1uF		50V
C804	1-164-159-11	CERAMIC	0.1uF		50V
C805	1-124-902-00	ELECT	0.47uF	20%	50V
C806	1-164-159-11	CERAMIC	0.1uF		50V
C807	1-164-159-11	CERAMIC	0.1uF		50V
C808	1-124-902-00	ELECT	0.47uF	20%	50V
C809	1-124-907-11	ELECT	10uF	20%	50V
C810	1-124-907-11	ELECT	10uF	20%	50V
C811	1-162-288-31	CERAMIC	330PF	10%	50V
C812	1-162-288-31	CERAMIC	330PF	10%	50V
C813	1-124-477-11	ELECT	47uF	20%	25V
C814	1-124-477-11	ELECT	47uF	20%	25V
C815	1-124-477-11	ELECT	47uF	20%	25V
C816	1-124-907-11	ELECT	10uF	20%	50V
C817	1-124-907-11	ELECT	10uF	20%	50V
C818	1-124-360-00	ELECT	1000uF	20%	16V
C901	1-124-907-11	ELECT	10uF	20%	50V

< CONNECTOR >

* CN31A	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P	
* CN31B	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P	
* CN33A	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P	
* CN33B	1-691-916-11	CONNECTOR, BOARD TO BOARD 10P	
* CN502	1-568-836-11	SOCKET, CONNECTOR 17P	
* CN503	1-568-824-11	SOCKET, CONNECTOR 5P	
* CN81A	1-568-828-11	SOCKET, CONNECTOR 9P	
* CN81B	1-568-828-11	SOCKET, CONNECTOR 9P	
* CN901	1-568-828-11	SOCKET, CONNECTOR 9P	
* CN902	1-568-842-11	SOCKET, CONNECTOR 27P	
* CNP501	1-564-337-00	PIN, CONNECTOR 3P	
* CNP502	1-568-836-11	SOCKET, CONNECTOR 17P	
* CNP503	1-568-824-11	SOCKET, CONNECTOR 5P	
* CNP701	1-564-510-11	PLUG, CONNECTOR 7P	
* CNP702	1-564-339-00	PIN, CONNECTOR 5P	
* CNP901	1-568-852-11	SOCKET, CONNECTOR 9P	
* CNP902	1-568-869-11	SOCKET, CONNECTOR 27P	

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D101	8-719-987-63	DIODE 1N4148M	
D201	8-719-987-63	DIODE 1N4148M	
D501	8-719-933-33	DIODE HZS6A1L	
D502	8-719-987-63	DIODE 1N4148M	
D701	8-719-200-77	DIODE 10E2N	
D702	8-719-200-77	DIODE 10E2N	
D703	8-719-200-77	DIODE 10E2N	
D704	8-719-200-77	DIODE 10E2N	
D705	8-719-200-77	DIODE 10E2N	
D706	8-719-200-77	DIODE 10E2N	
D707	8-719-200-77	DIODE 10E2N	
D708	8-719-987-63	DIODE 1N4148M	
D709	8-719-000-78	DIODE UZL-7L2	
D710	8-719-933-33	DIODE HZS6A1L	
D711	8-719-933-33	DIODE HZS6A1L	
D712	8-719-987-63	DIODE 1N4148M	
D713	8-719-987-63	DIODE 1N4148M	
D714	8-719-000-93	DIODE UZL-7H1	
D715	8-719-933-33	DIODE HZS6A1L	
D716	8-719-987-63	DIODE 1N4148M	
D801	8-719-987-63	DIODE 1N4148M	
D802	8-719-987-63	DIODE 1N4148M	
D803	8-719-987-63	DIODE 1N4148M	
D804	8-719-987-63	DIODE 1N4148M	
		< IC >	
IC501	8-752-037-90	IC CXA1331M	
IC502	8-752-058-57	IC CXA1599Q	
IC503	8-752-055-61	IC CXA1578P	
IC504	8-759-145-58	IC uPC4558C	
IC701	8-759-634-51	IC M5218AP	
IC801	8-759-066-15	IC LC866012A-5193	
IC802	8-759-000-48	IC MC14052BCP	
IC803	8-759-207-05	IC TA7272P	
IC901	8-741-100-48	IC SBX1610-59	
		< JACK >	
J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)	
J502	1-507-796-71	JACK (HEADPHONES)	
		< COIL >	
* L801	1-420-872-00	COIL, AIR CORE	
* L802	1-420-872-00	COIL, AIR CORE	
L803	1-408-080-00	INDUCTOR 100uH	
		< FILTER >	
LPF101	1-231-388-00	FILTER, LOW PASS	
LPF201	1-231-388-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q101	8-729-900-74	TRANSISTOR DTC143TS	
Q102	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q103	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q201	8-729-900-74	TRANSISTOR DTC143TS	
Q202	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q203	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q501	8-729-900-65	TRANSISTOR DTA144ES	
Q502	8-729-900-89	TRANSISTOR DTC144ES	
Q503	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q504	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q505	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q506	8-729-900-65	TRANSISTOR DTA144ES	
Q507	8-729-900-89	TRANSISTOR DTC144ES	
Q701	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q702	8-729-209-15	TRANSISTOR 2SD2012	
Q703	8-729-900-89	TRANSISTOR DTC144ES	
Q704	8-729-900-85	TRANSISTOR DTC144WS	
Q705	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q706	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q707	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q708	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q801	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q803	8-729-900-89	TRANSISTOR DTC144ES	
Q804	8-729-801-93	TRANSISTOR 2SD1387-3	
Q805	8-729-801-93	TRANSISTOR 2SD1387-3	
Q806	8-729-900-80	TRANSISTOR DTC114ES	
Q807	8-729-900-89	TRANSISTOR DTC144ES	
Q808	8-729-900-61	TRANSISTOR DTA114ES	
Q809	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q810	8-729-900-89	TRANSISTOR DTC144ES	
Q811	8-729-900-65	TRANSISTOR DTA144ES	
Q812	8-729-900-65	TRANSISTOR DTA144ES	
Q813	8-729-900-80	TRANSISTOR DTC114ES	
Q814	8-729-900-80	TRANSISTOR DTC114ES	
Q815	8-729-900-89	TRANSISTOR DTC144ES	
Q816	8-729-900-61	TRANSISTOR DTA114ES	
Q817	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q818	8-729-900-89	TRANSISTOR DTC144ES	
Q819	8-729-900-65	TRANSISTOR DTA144ES	
Q820	8-729-900-65	TRANSISTOR DTA144ES	
Q821	8-729-900-80	TRANSISTOR DTC114ES	
Q822	8-729-900-80	TRANSISTOR DTC114ES	

SYSTEM CONTROL

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R101	1-249-432-11	CARBON	18K	5%	1/4W	
R102	1-247-838-00	CARBON	2K	5%	1/4W	
R103	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R104	1-249-441-11	CARBON	100K	5%	1/4W	
R105	1-247-834-11	CARBON	1.3K	5%	1/4W	
R106	1-249-429-11	CARBON	10K	5%	1/4W	
R107	1-247-856-00	CARBON	11K	5%	1/4W	
R108	1-247-864-11	CARBON	24K	5%	1/4W	
R109	1-249-414-11	CARBON	560	5%	1/4W	F
R110	1-249-429-11	CARBON	10K	5%	1/4W	
R111	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R112	1-249-429-11	CARBON	10K	5%	1/4W	
R113	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R114	1-247-864-11	CARBON	24K	5%	1/4W	
R115	1-249-433-11	CARBON	22K	5%	1/4W	
R116	1-249-441-11	CARBON	100K	5%	1/4W	
R117	1-249-417-11	CARBON	1K	5%	1/4W	F
R118	1-249-409-11	CARBON	220	5%	1/4W	F
R119	1-249-441-11	CARBON	100K	5%	1/4W	
R120	1-249-439-11	CARBON	68K	5%	1/4W	
R121	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R122	1-249-429-11	CARBON	10K	5%	1/4W	
R123	1-247-850-11	CARBON	6.2K	5%	1/4W	
R124	1-249-437-11	CARBON	47K	5%	1/4W	
R125	1-249-417-11	CARBON	1K	5%	1/4W	F
R126	1-247-887-00	CARBON	220K	5%	1/4W	
R127	1-249-441-11	CARBON	100K	5%	1/4W	
R128	1-247-874-11	CARBON	62K	5%	1/4W	
R129	1-249-435-11	CARBON	33K	5%	1/4W	
R201	1-249-432-11	CARBON	18K	5%	1/4W	
R202	1-247-838-00	CARBON	2K	5%	1/4W	
R203	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R204	1-249-441-11	CARBON	100K	5%	1/4W	
R205	1-247-834-11	CARBON	1.3K	5%	1/4W	
R206	1-249-429-11	CARBON	10K	5%	1/4W	
R207	1-247-856-00	CARBON	11K	5%	1/4W	
R208	1-247-864-11	CARBON	24K	5%	1/4W	
R209	1-249-414-11	CARBON	560	5%	1/4W	F
R210	1-249-429-11	CARBON	10K	5%	1/4W	
R211	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R212	1-249-429-11	CARBON	10K	5%	1/4W	
R213	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R214	1-247-864-11	CARBON	24K	5%	1/4W	
R215	1-249-433-11	CARBON	22K	5%	1/4W	
R216	1-249-441-11	CARBON	100K	5%	1/4W	
R217	1-249-417-11	CARBON	1K	5%	1/4W	F
R218	1-249-409-11	CARBON	220	5%	1/4W	F

Ref. No.	Part No.	Description				Remark
R219	1-249-441-11	CARBON	100K	5%	1/4W	
R220	1-249-439-11	CARBON	68K	5%	1/4W	
R221	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R222	1-249-429-11	CARBON	10K	5%	1/4W	
R223	1-247-850-11	CARBON	6.2K	5%	1/4W	
R224	1-249-437-11	CARBON	47K	5%	1/4W	
R225	1-249-417-11	CARBON	1K	5%	1/4W	F
R226	1-247-887-00	CARBON	220K	5%	1/4W	
R227	1-249-441-11	CARBON	100K	5%	1/4W	
R228	1-247-874-11	CARBON	62K	5%	1/4W	
R229	1-249-435-11	CARBON	33K	5%	1/4W	
R501	1-249-434-11	CARBON	27K	5%	1/4W	
R502	1-249-426-11	CARBON	5.6K	5%	1/4W	
R503	1-249-429-11	CARBON	10K	5%	1/4W	
R504	1-215-455-00	METAL	27K	1%	1/6W	
R505	1-249-417-11	CARBON	1K	5%	1/4W	F
R506	1-215-455-00	METAL	27K	1%	1/6W	
R507	1-249-413-11	CARBON	470	5%	1/4W	F
R508	1-249-429-11	CARBON	10K	5%	1/4W	
R509	1-247-862-11	CARBON	20K	5%	1/4W	
R510	1-249-429-11	CARBON	10K	5%	1/4W	
R511	1-249-429-11	CARBON	10K	5%	1/4W	
R512	1-215-455-00	METAL	27K	1%	1/6W	
R516	1-249-429-11	CARBON	10K	5%	1/4W	
R517	1-249-432-11	CARBON	18K	5%	1/4W	
R518	1-249-430-11	CARBON	12K	5%	1/4W	
R519	1-249-413-11	CARBON	470	5%	1/4W	F
R520	1-249-429-11	CARBON	10K	5%	1/4W	
R521	1-249-429-11	CARBON	10K	5%	1/4W	
R522	1-249-441-11	CARBON	100K	5%	1/4W	
R523	1-249-417-11	CARBON	1K	5%	1/4W	F
R524	1-247-866-11	CARBON	30K	5%	1/4W	
R525	1-249-437-11	CARBON	47K	5%	1/4W	
R527	1-247-834-11	CARBON	1.3K	5%	1/4W	
R528	1-249-437-11	CARBON	47K	5%	1/4W	
R529	1-249-417-11	CARBON	1K	5%	1/4W	F
R530	1-247-862-11	CARBON	20K	5%	1/4W	
R531	1-249-429-11	CARBON	10K	5%	1/4W	
R532	1-249-433-11	CARBON	22K	5%	1/4W	F
⚠R533	1-212-863-00	FUSIBLE	18	5%	1/4W	F
R534	1-249-434-11	CARBON	27K	5%	1/4W	
R701	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R702	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R703	1-249-437-11	CARBON	47K	5%	1/4W	
R704	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R705	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R706	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R707	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R708	1-249-429-11	CARBON	10K	5%	1/4W	

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SYSTEM CONTROL

Ref. No.	Part No.	Description				Remark
R709	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R710	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R711	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R712	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R713	1-249-417-11	CARBON	1K	5%	1/4W	F
R714	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R715	1-249-429-11	CARBON	10K	5%	1/4W	
R716	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R717	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R718	1-219-136-11	FUSIBLE	0.22	10%	1/4W	
R719	1-249-414-11	CARBON	560	5%	1/4W	F
R801	1-247-903-00	CARBON	1M	5%	1/4W	
R802	1-249-433-11	CARBON	22K	5%	1/4W	
R803	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R804	1-249-437-11	CARBON	47K	5%	1/4W	
R805	1-249-437-11	CARBON	47K	5%	1/4W	
R806	1-249-437-11	CARBON	47K	5%	1/4W	
R807	1-247-862-11	CARBON	20K	5%	1/4W	
R808	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R809	1-247-862-11	CARBON	20K	5%	1/4W	
R810	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R811	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R812	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R813	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R814	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R815	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R816	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R817	1-249-434-11	CARBON	27K	5%	1/4W	
R818	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R819	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R820	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R821	1-249-434-11	CARBON	27K	5%	1/4W	
R822	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R823	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R824	1-249-429-11	CARBON	10K	5%	1/4W	
R825	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R826	1-249-429-11	CARBON	10K	5%	1/4W	
R827	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R828	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R829	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R830	1-249-429-11	CARBON	10K	5%	1/4W	
R831	1-247-866-11	CARBON	30K	5%	1/4W	
R832	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R833	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R834	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R835	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R836	1-249-429-11	CARBON	10K	5%	1/4W	
R837	1-247-866-11	CARBON	30K	5%	1/4W	
R838	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R839	1-249-430-11	CARBON	12K	5%	1/4W	
R840	1-249-433-11	CARBON	22K	5%	1/4W	
R841	1-247-864-11	CARBON	24K	5%	1/4W	
R842	1-249-433-11	CARBON	22K	5%	1/4W	
R843	1-249-405-11	CARBON	100	5%	1/4W	F
R844	1-249-430-11	CARBON	12K	5%	1/4W	
R845	1-249-433-11	CARBON	22K	5%	1/4W	
R846	1-247-864-11	CARBON	24K	5%	1/4W	
R847	1-249-433-11	CARBON	22K	5%	1/4W	
R848	1-249-405-11	CARBON	100	5%	1/4W	F
R849	1-247-887-00	CARBON	220K	5%	1/4W	
R901	1-249-407-11	CARBON	150	5%	1/4W	F
R902	1-249-409-11	CARBON	220	5%	1/4W	F
R903	1-249-411-11	CARBON	330	5%	1/4W	
R904	1-249-413-11	CARBON	470	5%	1/4W	F
R905	1-249-415-11	CARBON	680	5%	1/4W	F
R906	1-249-417-11	CARBON	1K	5%	1/4W	F
R907	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R908	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R909	1-249-430-11	CARBON	12K	5%	1/4W	
R910	1-249-407-11	CARBON	150	5%	1/4W	F
R911	1-249-409-11	CARBON	220	5%	1/4W	F
R912	1-249-411-11	CARBON	330	5%	1/4W	
R913	1-249-413-11	CARBON	470	5%	1/4W	F
R914	1-249-415-11	CARBON	680	5%	1/4W	F
R915	1-249-417-11	CARBON	1K	5%	1/4W	F
R916	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R917	1-249-407-11	CARBON	150	5%	1/4W	F
R918	1-249-409-11	CARBON	220	5%	1/4W	F
R919	1-249-411-11	CARBON	330	5%	1/4W	
R920	1-249-413-11	CARBON	470	5%	1/4W	F
R921	1-249-415-11	CARBON	680	5%	1/4W	F
R922	1-249-417-11	CARBON	1K	5%	1/4W	F
R924	1-249-425-11	CARBON	4.7K	5%	1/4W	F

< VARIABLE RESISTOR >

RV101	1-238-600-11	RES, ADJ, CARBON 10K
RV102	1-238-600-11	RES, ADJ, CARBON 10K
RV201	1-238-600-11	RES, ADJ, CARBON 10K
RV202	1-238-600-11	RES, ADJ, CARBON 10K
RV501	1-241-798-11	RES, VAR, CARBON 20K (BALANCE)
RV502	1-241-797-11	RES, VAR, CARBON 20K (REC LEVEL)

< SWITCH >

S701	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)
S901	1-554-303-21	SWITCH, TACTILE (DECK A: ■)
S902	1-554-303-21	SWITCH, TACTILE (DECK A: ❚❚)
S903	1-554-303-21	SWITCH, TACTILE (DECK A: ▷)
S904	1-554-303-21	SWITCH, TACTILE (DECK A: ◁)

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SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
S905	1-554-303-21	SWITCH, TACTILE (DECK A: ⏺)	
S906	1-554-303-21	SWITCH, TACTILE (DECK A: ⏪)	
S907	1-554-303-21	SWITCH, TACTILE (DECK A: ⏩)	
S908	1-554-303-21	SWITCH, TACTILE (DECK A: ●)	
S909	1-554-303-21	SWITCH, TACTILE (DECK B: ■)	
S910	1-554-303-21	SWITCH, TACTILE (DECK B: ⏸)	
S911	1-554-303-21	SWITCH, TACTILE (DECK B: ▷)	
S912	1-554-303-21	SWITCH, TACTILE (DECK B: ◁)	
S913	1-554-303-21	SWITCH, TACTILE (DECK B: ⏺)	
S914	1-554-303-21	SWITCH, TACTILE (DECK B: ⏪)	
S915	1-554-303-21	SWITCH, TACTILE (DECK B: ⏩)	
S916	1-554-303-21	SWITCH, TACTILE (DECK B: ●)	
S917	1-554-303-21	SWITCH, TACTILE (HIGH)	
S918	1-554-303-21	SWITCH, TACTILE (NORMAL)	
S919	1-554-303-21	SWITCH, TACTILE (A+B REC)	
S920	1-554-303-21	SWITCH, TACTILE (DECK A:RESET)	
S921	1-554-303-21	SWITCH, TACTILE (DECK A:MEMORY)	
S922	1-554-303-21	SWITCH, TACTILE (DECK B:RESET)	
S923	1-554-303-21	SWITCH, TACTILE (DECK B:MEMORY)	
S924	1-692-126-11	SWITCH, SLIDE (DIR MODE)	
S925	1-692-126-11	SWITCH, SLIDE (DOLBY NR)	
		< TEST PIN >	
* TP1	1-564-505-11	PLUG, CONNECTOR 2P	
* TP2	1-564-506-11	PLUG, CONNECTOR 3P	
		< FLUORESCENT INDICATOR >	
VFD901	1-519-712-11	INDICATOR TUBE, FLUORESCENT	
		< VIBRATOR >	
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠13	1-558-945-11	CORD, POWER (POLAR. SPT-1) (US)	
⚠14	1-555-795-00	CORD, POWER, EULO PLUG (AEP, Germany)	
⚠15	1-551-188-XX	CORD, POWER (E)	
⚠16	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠17	1-590-836-31	CORD, POWER (Canadian)	
62	1-575-905-31	WIRE, FLAT TYPE (9 CORE)	
63	1-690-908-11	WIRE (FLAT TYPE) (27 CORE)	
72	1-575-781-11	WIRE, FLAT TYPE (9 CORE)	
75	1-574-724-11	WIRE, FLAT TYPE (17 CORE)	
80	1-690-909-11	WIRE (FLAT TYPE) (9 CORE)	
81	1-696-981-11	WIRE (FLAT TYPE) (5 CORE)	
120	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
⚠F701	1-532-259-00	FUSE, TIME-LAG 1.6A (AEP, Germany, UK, E)	
⚠F701	1-532-742-11	FUSE, GLASS TUBE 1.6A (US, Canadian)	
⚠F702	1-532-259-00	FUSE, TIME-LAG 1.6A (AEP, Germany, UK, E)	
⚠F702	1-532-742-11	FUSE, GLASS TUBE 1.6A (US, Canadian)	
HRPE101A-2003-838-A		BASE ASSY, HEAD (REC/PB/ERASE)	
M1	X-3359-417-A	MOTOR ASSY (CAPSTAN)	
M2	X-3363-501-A	MOTOR (REEL MOTOR) ASSY	
⚠T701	1-450-863-11	TRANSFORMER, POWER (E)	
⚠T701	1-450-869-11	TRANSFORMER, POWER (US, Canadian)	
⚠T701	1-450-870-11	TRANSFORMER, POWER (AEP, Germany, UK)	
⚠VS701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	

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ACCESSORIES & PACKING MATERIALS

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	1-465-738-11	REMOTE COMMANDER (RMJ-903) (US, Canadian)
	1-558-271-11	CORD, CONNECTION
	1-696-170-11	CORD, CONNECTION
	2-181-754-01	COVER, BATTERY (US, Canadian)
*	3-366-701-91	INDIVIDUAL CARTON
*	3-376-446-01	CUSHION
	3-754-780-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH. PORTUGUESE) (Canadian, AEP, E)
	3-754-780-21	MANUAL, INSTRUCTION (ENGLISH) (US, UK)
	3-754-780-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH) (AEP)
	3-754-780-51	MANUAL, INSTRUCTION (GERMAN) (Germany)
	3-754-780-61	MANUAL, INSTRUCTION (CHINESE) (E)
	3-755-288-11	MANUAL, INSTRUCTION (RM) (US, Canadian)

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Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-682-547-09	SCREW +BVTT 3X6 (S)	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 SLIT	
#5	7-685-134-19	SCREW (+ PTPWH) (2.6X8)	
#6	7-621-773-95	SCREW +BVTT 2.6X6 (S)	
#7	7-621-775-00	SCREW +B 2.6X3	
#8	7-627-556-08	SCREW +P 2.6X2.8	
#9	7-621-849-00	SCREW (BV/RING)	

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